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HOME

2019-2020 Academic Year

General Catalog Expiration date: Last day of the spring 2026 semester

The University of Idaho is accredited by the Northwest Commission on Colleges and Universities.

Accreditation of an institution of higher education by the Northwest Commission on Colleges and Universities indicates that it meets or exceeds criteria for the assessment of institutional quality evaluated through a peer review process. An accredited college or university is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the Northwest Commission on Colleges and Universities is not partial but applies to the institution as a whole. As such, it is not a guarantee of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding an institution's accredited status by the Northwest Commission on Colleges and Universities should be directed to the administrative staff of the institution. Individuals may also contact:

Northwest Commission on College and Universities
8060 165th Avenue N.E., Suite 100
Redmond, WA 98052 425-558-4224 www.nwccu.org (http://www.nwccu.org)

ACADEMIC CALENDAR

Dates in this calendar are subject to change without notice; dates appearing in admission and registration instructions take precedence over those listed below.

Summer 2019

Date	Event
Monday, May 13	Beginning of Session I
Monday, May 27	Memorial Day - classes DO NOT meet
Monday, June 10	Beginning of Session II
Monday, June 24	Beginning of Session III - 6 weeks
Thursday, July 4	Independence Day - classes DO NOT meet
Monday, July 8	Beginning of Session III - 4 weeks
Friday, August 2	Close of Summer session
Tuesday, August 6	Final Grades due by 12:00pm

Fall Semester 2019

Date	Event
Monday, August 19	WSU Coop classes begin
	WWAMI Program begins
Monday, Aug. 26	Classes begin
	Deadline to pay tuition without late fees
Monday, September 2	Labor Day – classes DO NOT meet
Tuesday, September 3	Last day to add a course with instructor permission
Monday, September 9	Last day to drop a course without having a grade of 'W' recorded
Monday, Oct. 21	Beginning of Late 8 week part of term
Friday, November 1	Last day to withdraw from a course or from the university
Mon-Fri, Nov. 25-29	Fall recess
Mon-Fri, Dec. 9-13	No-examination week
Mon-Fri, Dec. 9-20	College of Law finals examinations
Saturday, Dec. 14	Commencement
Mon-Fri, Dec. 16-20	Final examinations
Friday, Dec. 20	Close of Fall semester
Tuesday, Dec. 24	Final Grades due by 12:00pm

Intersession 2019-2020

Note: Scheduled breaks for the observance of holidays vary by class.

Date	Event
Saturday, Dec. 21	Classes begin
Tuesday, Jan. 14	Close of Intersession
Friday, Jan. 17	Final Grades due by 12:00pm

Spring Semester 2020

Date	Event
Thursday, Jan 9	WWAMI Program begins
Monday, Jan. 13	Law classes begin
	Cooperatively offered courses at Washington State University begin
Wednesday, Jan. 15	Classes begin
	Deadline to pay tuition without late fees.
Monday, Jan. 20	Martin Luther King/Human Rights Day – Classes DO NOT meet
Thursday, Jan. 23	Last day to add a course with instructor permission
Wednesday Jan. 29	Last day to drop a course without having a grade of 'W' recorded
Monday, Feb. 17	Presidents' Day – UI Closed
Mon-Fri, March 16-20	Spring recess
Monday, March 23	Beginning of Late 8 week classes
Friday, April 3	Last day to withdraw from a course or from the university
Mon-Fri, May 4-8	No-examination week
Mon-Fri, May 4-15	College of Law final examinations
Mon-Fri, May 11-15	Final examinations
Friday, May 15	Close of Spring semester
Saturday, May 16	Commencement
Tuesday, May 19	Final Grades due by 12:00pm

THE UNIVERSITY

The University of Idaho is a land-grant research institution founded in 1889 by a statute of the 15th territorial legislature. Commonly known as the university charter, this statute became part of the state constitution when Idaho was admitted to the Union in 1890. The university's intimate campus, statewide laboratories, extension centers, outreach programs, and passionate faculty provide aspiring leaders with opportunities to challenge themselves and address pressing national problems. Other user edit for demonstration.

The university community has implemented a strategic plan to further the institution's vision. With the support of units across campus, this 2016-2025 Strategic Plan fulfills the promise of a 21st century land-grant institution to lead and inspire Idaho, the nation, and the world.

The university is a publicly supported institution with principal responsibility in Idaho for performing research and granting the Doctor of Philosophy (PhD) degree. The liberal arts and sciences, offered through the College of Letters, Arts and Social Science and the College of Science, are the heart of the university's educational programs. The primary areas of statewide responsibility are agriculture, natural resources, engineering, medical and veterinary education, architecture, and law with programs in liberal arts, sciences, education, business and economics. In addition, the University Library and the Law Library contain over two million books, bound periodicals, microforms, and U.S. government publications. These resources - together with the libraries at Washington State University (eight miles to the west) - equal those of major metropolitan areas.

To assist with its statewide mission, the university maintains resident instruction centers in Coeur d'Alene, Boise, and Idaho Falls, extension offices in 42 of Idaho's 44 counties, research and extension centers in Aberdeen, Caldwell, Dubois, Idaho Falls, Kimberly, Moscow, Parma, Salmon, Sandpoint, Tetonia, and Twin Falls, and field stations at McCall, Point Springs, and the Taylor Ranch in central Idaho. Through international programs, the university extends its services to many other countries.

Nearly 12,000 students from all states and more than 90 foreign countries choose programs from a vast array of disciplines. Strong undergraduate programs are coupled with nationally recognized research and scholarly achievements. The university has granted more than 100,000 degrees since its founding. Student and research success comes through the efforts of more than 920 faculty members in teaching and research, and 2,200 staff and professional personnel who work at more than 70 locations covering more than 10,000 acres.

The university is proud of its friendly campus atmosphere and sense of community. The feeling of camaraderie that pervades the campus extends to Moscow, the university's "hometown." It is a thriving community of nearly 24,000 located in the northern part of the state about 90 miles southeast of Spokane, Washington.

Moscow is the gateway to a natural wonderland. The surrounding Palouse hills and the mountains and lakes of northern Idaho provide a scenic background for university facilities. Skiing, boating, and other outdoor recreation resources are available within easy driving distance. They include the Sawtooth and Hells Canyon national recreation areas, Frank Church River of No Return Wilderness, and scenic rivers such as the Snake, Clearwater, Salmon, Lochsa, and Selway.

The university is a member of the National Association of State Universities and Land-Grant Colleges and is accredited by the Northwest Commission on Colleges and Universities. Additional approval or accreditation for specific programs has been granted by the following organizations:

- ABET, Inc.
  - Biological Engineering
  - Chemical Engineering
  - Civil Engineering
  - Computer Science
  - Electrical Engineering
  - Materials Science and Engineering
  - Mechanical Engineering
- Accreditation Council for the Education of Nutrition and Dietetics from the Academy of Nutrition and Dietetics (ACEND)
  - Food and Nutrition
- Accrediting Council on Education in Journalism and Mass Communications
  - Advertising
  - Broadcasting and Digital Media
  - Public Relations
  - Journalism
- Accredited Financial Counselor Certification through the Association for Financial Counseling and Planning Education
  - Child, Family, and Consumer Sciences
- American Bar Association
  - Law
- American Chemical Society
  - Chemistry-Professional Option
- American Society of Landscape Architects (ASLA)
  - Landscape Architecture
- Association of Technology, Management, and Applied Engineering (ATMAE)
  - Industrial Technology
- Association to Advance Collegiate Schools of Business
  - Accountancy
  - Accounting
  - Business
  - Business Economics
  - Economics
  - Entrepreneurship
  - Finance
  - General Management
  - Information Systems
  - International Business
  - Management and Human Resources
  - Marketing
  - Operations Management
- Commission on Accreditation of Athletic Training Education for Master's Level Programs (CAATE)
  - Athletic Training
- Council for Interior Design Accreditation (CIDA)
  - Interior Design
- Council for the Accreditation of Educator Preparation (CAEP)
  - Agricultural Education
  - Business Education
  - Career and Technical Education

- Curriculum and Instruction
- Early Childhood Development and Education
- Earth Science
- Educational Leadership
- Elementary Education
- English
- Geography
- Industrial Technology Education
- Library Science
- Mathematics
- Physical Education
- Physical Science
- Physics
- Political Science
- Secondary Education
- Social Science
- Special Education
- Speech
- Technical Workforce Training
- Technology Education

- Council on Rehabilitation Education (CORE)
  - Rehabilitation Counseling and Human Services
- Council on the Accreditation of Parks, Recreation, Tourism, and Related Professions (COAPRT)
  - Outdoor Recreation Leadership
  - Recreation
- Human Factors and Ergonomics Society
  - Experimental Psychology
- Idaho Professional Standards Commission (PSC)
  - Agricultural Education
  - Biological Sciences
  - Business Education
  - Career and Technical Education
  - Chemistry-Professional Option
  - Curriculum and Instruction
  - Early Childhood Development and Education
  - Earth Science
  - Educational Leadership
  - Elementary Education
  - English
  - Geography
  - Health Education
  - Industrial Technology Education
  - Library Science
  - Mathematics
  - Physical Education
  - Physical Sciences
  - Physics
  - Political Science
  - Secondary Education
  - Social Science
  - Special Education
  - Speech
  - Technical Workforce Training
  - Technology Education
- International Food Technology (IFT)
  - Food Science
- Landscape Architecture Accreditation Board (LAAB)
  - Landscape Architecture
- National Architectural Accrediting Board (NAAB)
  - Architecture
- National Association for the Education of Young Children (NAEYC)
  - Child, Family, and Consumer Studies
- National Association of Schools of Art and Design (NASAD)
  - Art
  - Art Education
  - Studio Art and Design
  - Virtual Technology and Design
- National Association of Schools of Music
  - Music Education
  - Music
  - Music: Business
  - Music: Compostition
  - Music: Performance
- National Council for Accreditation of Teacher Education (NCATE)
  - Agricultural Education
  - Biological Sciences
  - Business Education
  - Career and Technical Education
  - Chemistry-Professional Option
  - Curriculum and Instruction
  - Early Childhood Development and Education
  - Earth Science
  - Educational Leadership
  - Elementary Education
  - English
  - Geography
  - Industrial Technology Education
  - Library Science
  - Mathematics
  - Physical Education
  - Physical Sciences
  - Physics
  - Political Science
  - Secondary Education
  - Social Science
  - Special Education
  - Speech
  - Technical Workforce Training
  - Technology Education
- National Recreation and Park Association Council on Accreditation
  - Recreation, Sport, and Tourism Management
- PGA Professional Golfers Association of America
  - Marketing-PGA Golf Management Option
- Society for Range Management
  - Rangeland Ecology and Management
- Society for Wood Science and Technology

    - Renewable Materials
- Society of American Foresters
    - Forest Resources

SBOE MISSION STATEMENT - UNIVERSITY OF IDAHO

The University of Idaho is the state's land-grant research university. From that distinctive origin, we will enhance the scientific, economic, social, legal and cultural assets of our state and develop solutions for complex problems facing our society. We will continue to deliver excellence in teaching, research, and outreach in a collaborative environment at our residential main campus in Moscow, regional centers, extension offices and research facilities across Idaho. Consistent with the land-grant ideal, we will ensure that our outreach activities serve the state and strengthen our teaching, scholarly and creative capacities statewide.

The University of Idaho will shape the future through innovative thinking, transformative education, and community engagement.

Our educational offerings will transform the lives of our students through engaged learning and self-reflection.

Our teaching and learning will include undergraduate, graduate, professional and continuing education offered through face-to-face instruction, technology-enabled delivery and hands-on experience.

Our educational programs will strive for excellence and will be enriched by the knowledge, collaboration, diversity and creativity of our faculty, students and staff.

VISION

The University of Idaho will expand the institution's intellectual and economic impact and make higher education relevant and accessible to qualified students of all backgrounds.

Exceptional research universities such as the University of Idaho prepare students not just with today's knowledge, but also with the ability to discover new frontiers and construct the future. We educate students at the undergraduate, graduate, and professional levels to meet the needs of Idaho and the world. We improve lives through research, scholarship and creative activity.

As Idaho's land-grant university, the University of Idaho will maintain its current leadership in research and engagement with Idaho communities. We will continue to provide leading graduate and professional education including enhanced production of doctoral, masters and professional degrees. The University of Idaho will become a Carnegie R1 (Highest Research Activity) institution known for excellence in our areas of strength and recognized for interdisciplinary research.

The University of Idaho will serve any qualified student by providing access to unique educational experiences. The university will enroll a mix of resident and nonresident (including international) students at the graduate and undergraduate levels. Our resident students will represent a cross-section of Idaho in ethnic, socioeconomic and demographic terms. We will augment discipline-specific learning with a strong foundation in the liberal arts.

The university will excel in student success as measured by the transformative educational experience, the achievement of student learning outcomes, retention and graduation rates, and career outcomes. Other measures of student engagement and learning will include the National Survey of Student Engagement (NSSE). The university will engage and lead across the state in an effort to help Idaho achieve its goal of 60 percent postsecondary education attainment. To achieve this goal, undergraduate enrollment and graduates will increase 50 percent over current levels. The university will be a purpose-driven organization, a vibrant intellectual community that attracts, retains and develops great faculty and staff. We will achieve this outcome by using our existing resources effectively, generating additional resources and improving our physical and professional environment.

PRINCIPLES AND VALUES

Excellence

Individual commitment to excellence is central to the values we promote. We value the purposeful pursuit of knowledge that improves our communities and prepares us for a lifetime of service. In pursuit of this, we seek to foster a culture of leadership, excellence, and celebration.

Respect

Central to our productivity and morale is a climate that is considerate and respectful. The University of Idaho is an extensive and diverse community of people from varied backgrounds and beliefs. We welcome the viewpoints and contributions of everyone in our community. We believe that an institution is only as strong as its ability to include diverse perspectives that critically contribute to the University of Idaho's mission.

Integrity

We believe that adherence to and a shared understanding of ethical principles is necessary for effective collaboration within an educational community. The University of Idaho is committed to internal congruence as well as openness and transparency in decision-making and leadership.

Perseverance

The University of Idaho is a community that is brave and bold in our pursuit of higher aspirations, always pushing to offer the best opportunities and environment for our students, faculty, staff and community. We are confident in our ability to succeed and have demonstrated long-term discipline to achieve our goals.

Sustainability

We embrace our personal obligation to ensure the sustainability of our future. Promoting healthy lifestyles is part of our effort to encourage stewardship of the natural environment.

REGENTS AND ADMINISTRATION

(April 2019)

Board of Regents

Linda Clark, *President,* Meridian
Emma Atchley, BAHR Chair, Ashton
Debbie Critchfield, *Vice President, IRSA Chair*, Oakley
David Hill, *Secretary, IRSA Chair,* Boise
Andrew Scoggin, Boise
Don Soltman, Twin Lakes
Richard Westerberg, Preston
Sherri Ybarra, *State Superintendent of Public Instruction*, Mountain Home

University Administration

C. Scott Green, Ph.D., *President*
John M. Wiencek, Ph.D., *Provost and Executive Vice President*
Yolanda Bisbee, Ed.D., *Chief Diversity Officer & Executive Director of Tribal Relations*
Brian Foisy, M.Acct., *Vice President for Finance and Administration*
Mary Kay McFadden, E.M.B.A., *Vice President for University Advancement*
Dan Ewart, M.P.A., *Vice President for Information Technology/CIO*
Janet Nelson, Ph.D., *Vice President for Research & Economic Development*
Dean Kahler, Ph.D., Vice Provost of Strategic Enrollment Management
Cher Hendricks, Ph.D., *Vice Provost for Academic Initiatives*
Torrey Lawrence, D.M.A., *Vice Provost for Faculty*
Dale Pietrzak, Ed.D., *Director of Institutional Effectiveness and Accreditation*
Blaine Eckles, Ph.D., *Dean of Students and Vice Provost for Student Affairs*
Jeff Seegmiller, Ed.D., *WWAMI Medical Education Program*
Michael Satz, J.D., *Executive Officer, Southwest Idaho*
Lee Ostrom, Ph.D., *Executive Officer, Southeast Idaho*
Charles R. Buck, Ph.D., *Executive Officer, Northern Idaho*
Ben Hunter, M.S., *Dean – University Libraries*
Lindsey Brown, Ph.D., *University Registrar*
Daniel D. Davenport, Ph.D., *Director of Student Financial Aid*

Colleges

Agricultural and Life Sciences – Michael Parrella, Ph.D., *Dean*
Art and Architecture – Shauna Corry, Ph.D., *Term Dean*
Business and Economics – Marc Chopin, Ph.D., *Dean*
Education – Alison Carr-Chellman, Ph.D., *Dean*
Engineering – Larry A. Stauffer, Ph.D., *Dean*
Graduate Studies – Jerry McMurtry, Ph.D. *Dean*
Law – Jerrold Long, J.D., *Term Dean*
Letters, Arts, and Social Sciences – Sean Quinlan, Ph.D., *Term Dean*
Natural Resources – Dennis Becker, Ph.D., *Term Dean*
Science – Ginger Carney, Ph.D., *Dean*

STRATEGIC ACTION PLAN

2016-2025

INNOVATE: Scholarly and Creative work with impact

Goal 1: Scholarly and creative products of the highest quality and scope, resulting in significant positive impact for the region and the world

Objective A

Build a culture of collaboration that increases scholarly and creative productivity through interdisciplinary, regional, national and global partnerships.

Indicators

Increases in research expenditures and scholarly/creative works derived from collaborative partnerships.

Objective B

Create, validate and apply knowledge through the coproduction of scholarly and creative works by students, staff, faculty and diverse external partners.

Indicators

Increased number of terminal degrees and non-faculty scholars (e.g. postdoctoral researchers), increased number of undergraduate and graduate students supported on extramural funds, and increased percentage of undergraduates participating in research.

Objective C

Grow reputation by increasing the range, number, type and size of external awards, exhibitions, publications, presentations, performances, contracts, commissions and grants.

Indicators

Increase in above measures as well as invention disclosures

ENGAGE: Outreach that inspires innovation and culture

Goal 2: Suggest and influence change that addresses societal needs and global issues, and advances economic development and culture

Objective A

Inventory and continuously assess engagement programs and select new opportunities and methods that provide solutions for societal or global issues, support economic drivers and/or promote the advancement of culture.

Indicators

Number of University of Idaho Extension direct contacts with communities.

Objective B

Develop community, regional, national and/or international collaborations which promote innovation and use University of Idaho research and creative expertise to address emerging issues.

Indicators

Number of active responses/programs in progress that seek to address the identified societal issues or collaborate with communities on research, the arts or cultural enhancement as reflected by the percentage of faculty collaboration with communities (reported in HERI survey) as well as total economic impact assessment (EMSI).

Objective C

Engage individuals (alumni, friends, stakeholders and collaborators), businesses, industry, agencies and communities in meaningful and beneficial ways that support the University of Idaho's mission.

Indicators

National Survey on Student Engagement (NSSE) service learning metric, alumni participation rate, and dual credit engagement

TRANSFORM: Educational experiences that improve lives.

Goal 3: Increase our educational impact

Objective A

Provide greater access to educational opportunities to meet the evolving needs of society.

Indicators

Total number of enrolled students and conferred degrees (both undergraduate and graduate).

Objective B

Foster educational excellence via curricular innovation and evolution.

Indicators

Increased retention, numbers of graduates, NSSE High Impact Practices score and reductions in remediation via curricular innovation.

Objective C

Create an inclusive learning environment that encourages students to take an active role in their student experience.

Indicators

Measures educational parity and retention rates (for new and for transfer students).

CULTIVATE: A valued and diverse community

Goal 4: Foster an inclusive, diverse community of students, faculty and staff and improve cohesion and morale

Objective A

Build an inclusive, diverse community that welcomes multicultural and international perspectives.

Indicators

Increased multicultural student enrollment, international student enrollment, percent of multicultural faculty and staff.

Objective B
Enhance the University of Idaho's ability to compete for and retain outstanding scholars and skilled staff.

Indicators
Improved job satisfaction scores and reduced staff turnover rate.

Objective C
Improve efficiency, transparency and communication.

Indicators
Invest resources wisely to enhance end user experiences (e.g. more customer service oriented) and maintain affordability for students (cost per credit hour and SBOE efficiency measure).

STUDENT/PROGRAM ASSESSMENT

The University of Idaho and all other public institutions of higher education in Idaho are required by policy of the State Board of Education to assess student learning in general education and in academic majors. In late 1991, the Northwest Commission on Colleges and Universities (the university's accrediting body) issued similar guidelines requiring assessment.

Effective teaching and learning are essential to meeting our long-held goal of producing responsible, well-prepared citizens and leaders in their professions. Our program of student outcomes assessment has been implemented to ensure that we continually improve the teaching and learning process and the programs that support that process.

Information vital to effective assessment includes student performance as well as student opinions on the quality of university academic programs and services. Students are an integral part of course and program assessment and are asked to participate in assessment activities; these include, but are not limited to, examinations, performance assessments, interviews, surveys, focus groups, and follow-up surveys after graduation.

UNIVERSITY LEARNING OUTCOMES

University learning outcomes broadly describe expected and desired consequences of learning through integrated curricular and co-curricular experiences. The outcomes become an expression of the desired attributes of an educated person and guide coherent, integrated and intentional educational experiences. They provide us with a basis for ongoing assessment to continuously improve teaching and learning.

1. Learn and integrate - Through independent and collaborative learning, attain, use, and develop knowledge in the arts, humanities, sciences, and social sciences, with disciplinary specialization and the ability to integrate information across disciplines.
2. Think and create - Use multiple thinking strategies to examine real-world issues, explore creative avenues of expression, solve problems, and make decisions.
3. Communicate - Acquire, articulate, create and convey intended meaning using verbal and non-verbal methods of communication that demonstrate respect and understanding in a complex society.
4. Clarify purpose and perspective - Explore one's life purpose and meaning through transformational experiences that foster an understanding of self, relationships, and diverse global perspectives.
5. Practice citizenship - Apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities.

These learning outcomes are further developed at the program and course level. Learning outcomes for undergraduate and graduate degree and approved certificate programs can be reviewed at www.uidaho.edu/learningoutcomes.

GENERAL HONORARY SOCIETIES

The university has long possessed nationally recognized marks of excellence, including chapters of national honorary and scholarship societies in practically every specialized field and chapters of the following general honorary societies: Phi Beta Kappa (since 1926), Phi Kappa Phi (since 1960), Sigma Xi (since 1922), and Golden Key (since 1990).

Phi Beta Kappa

To qualify for nomination to Phi Beta Kappa, a candidate must have a major in the College of Letters, Arts & Social Sciences or the College of Science. Juniors must have achieved a 3.90 UI cumulative GPA; have completed one full semester of the junior year, and have been in residence at least five semesters. All PBK requirements must be completed prior to the semester in which they are elected. Seniors must have achieved a 3.80 UI cumulative GPA and be in residence at least 4 semesters at graduation or must have achieved a 3.70 UI cumulative GPA and be in residence at least 7 semesters at graduation. Nominees must have fulfilled the following distribution requirements: humanities and social sciences (16 total semester credits of humanities and social sciences, with no fewer than 7 semester credits of humanities and no fewer than 7 semester credits of social sciences); laboratory sciences and/or mathematics (10 semester credits); foreign language (16 credits of a single foreign language through the intermediate level, or 4 full years of high school language). Double majors (CLASS or Science, plus another college) must complete a minimum of 90 liberal arts credits. In addition to these minimum requirements, candidates will be determined by other factors such as citizenship and scholastic rigor.

Phi Kappa Phi

To qualify for nomination by the local chapter of Phi Kappa Phi, a candidate must be

1. registered at UI for at least one year and
2. enrolled in the final period of his or her junior year and rank scholastically in the upper 5 percent of the class or a senior enrolled in a course of study leading to a baccalaureate degree and rank scholastically in the upper 10 percent of his or her class.

Sigma Xi

To qualify for nomination to associate membership in Sigma Xi, a student must have shown marked aptitude for research in some field of pure or applied science. An associate member must have shown noteworthy achievement as an original investigator in some field of pure or applied science to qualify for nomination to full membership.

Golden Key National Honor Society

To qualify for membership in Golden Key, a student must have junior or senior standing and must have a cumulative grade-point average that falls in the top 15 percent of the junior and senior classes. Transfer students who have completed at least 25 semester credits at the University of Idaho and meet the grade-point average requirements also qualify for membership.

LIBRARIES

The University Library and the Law Library hold over two million items. The libraries receive 65,000 serials in over 210 databases, provide access to approximately 11,000 electronic books and reference tools, add over 20,000 physical items annually to their collections, and maintain subscriptions to all Idaho newspapers and representative papers from around the U.S. The library is a regional depository for U.S. and Idaho state government documents, serves as the statewide clearinghouse for geospatial data, and is a designated Earth Science Information Center.

The libraries' collections emphasize the land-grant traditions of the basic sciences, agriculture, and the natural resources while maintaining supporting collections in the humanities and social sciences. Special Collections and Archives are rich in collections of Pacific Northwest and Idaho state history, including books, photographs, and historical maps. The archives contain personal papers and records of families, politicians, educators, authors, and business records of lumber companies, mines, and railroads. It is also home to the International Jazz Collections, which contain papers, photos, and recordings of jazz musicians and critics. The library has created and is developing digital images of many important resources, providing electronic access to such archives as the International Jazz Collections, the Barnard Stockbridge photographic collection, Idaho Waters Digital Library, historic aerial photographs, and the Kooskia internment camp scrapbook.

The Law Library operates as the laboratory for the College of Law, housing materials in support of academic and research interests. Numbering over 250,000 volumes and volume equivalents, the collection has primary materials in the form of statutes and and transcriptions for the federal system and all 50 states. Secondary materials, consisting of treatises, law reviews, and loose-leaf services, round out the American law collection. There is a working collection of United Kingdom and Canadian primary and secondary materials and a growing international law collection. The Law Library is also a selective federal documents depository. A variety of electronic legal databases are available for use by the University community and the general public.

The law library's special collections include records and briefs submitted to the Idaho Supreme Court and Court of Appeals, a historical collection of Idaho legislative and administrative legal materials, and the Clagett Collection, which consists of materials collected by Fred and Dorothy Clagett to support their research on the life and times of William H. Clagett, the president of Idaho's Constitutional Convention in 1889.

The library building was expanded and remodeled in 1993, providing structural opportunities to expand collections in the current facility. The library facility is open from 8 a.m. to midnight daily during the school terms, with a 24-hour study area. The library is home to the largest student computing lab on campus, with nearly 200 computers available to students, faculty, and staff. Electronic collections enable the library to offer services to students and faculty at all times, regardless of location.

There is a reciprocal use agreement between the University of Idaho Libraries and the Washington State University Libraries located in Pullman, eight miles away, giving students immediate access to the equivalent of library resources in many urban areas. Similar agreements exist with the Lewis Clark State College Library, located in Lewiston, North Idaho College Library, located in Coeur d'Alene, and both Whitworth University Library and Gonzaga University Libraries, located in Spokane. The library cooperates with institutions throughout the Pacific Northwest and beyond. Electronic delivery services coupled with courier systems ensure rapid delivery of items held throughout the area.

ART GALLERIES

The University Art Galleries are northern Idaho's principal facilities emphasizing the visual arts. The University Gallery occupies the main floor of Ridenbaugh Hall on campus (corner of Blake Street and Campus Drive) and the Prichard Art Gallery is located at 414/416 South Main Street in downtown Moscow, open year round. During the academic year, the University Gallery displays the work of University Undergraduate and Graduate students studying in the disciplines of Art and Design, Architecture, and Landscape Architecture. All gallery programs and exhibitions are free and open to the public.

Through the galleries' rotation of exhibits, visitors may see examples of visual arts that include traditional and experimental art media and decorative and applied design. The galleries' objectives are to provide opportunities for local, regional, and national artists to exhibit their work, a means by which visitors' awareness and appreciation of the arts is heightened. The galleries also serve as an excellent teaching device. Outreach by the Prichard strengthens ties between the university and its communities.

In addition to exhibitions of work by artists of international, national, and regional repute, exhibitions mounted each year at the Prichard Art Gallery traditionally include those by faculty members and graduate students from the College of Letters, Arts & Social Sciences. In service of the university and the community, the Prichard hosts public receptions held in connection with some exhibitions, occasional musical performances, seminars with guest artists and lecturers, and the A.R.T. Gallery Connections Docent Program (K-12).

The gallery facilities and programs are administered through the College of Letters, Arts and Social Sciences.

INFORMATION TECHONOLOGY SERVICES

ITS provides the university community with information technologies and support to complement its teaching, learning, research, telecommunications, and outreach activities, as well as serve administrative operations. The ITS main office is located in the Administration Building, Room 140, phone 208-885-6721.

Some services provided by ITS include:

- **Help Desk Services** – provides technical assistance through telephone, e-mail, and walk-in support. The Help Desk can be visited at The Teaching and Learning Center (TLC) room 128 or reached at 208/885- HELP (208-885-4357) or helpdesk@uidaho.edu.
- **Student Computer Labs** – There are 18 student comping labs located across the Moscow campus, consisting of 550 Windows/Apple PCs and 26 printers, including computer access for individuals with disabilities. All labs are open during building hours except the two 24 hour labs located in the Administration building. The labs offer specialized software such as Mathlab, MathCAD, SPSS, ArcGIS, Adobe Creative Suite and other software applications to meet academic needs. These softwares are available to all students, faculty and staff at the University of Idaho. A NetID user account is required to login to a student computing labs workstation. Kiosk stations are located throughout campus and can be accessed using the NetID username and password. These light-weight machines provide email, internet access and printing services. For more information and access to VLab see www.uidaho.edu/its/services/classroom
- **Campus Wireless Network** – available throughout the Moscow, Coeur d'Alene, and Boise campuses, including UI Residences. Faculty, staff and Students are encouraged to use "AirVandalGold". Guests are invited to use "AirVandalGuest."
- **Technology Enhanced Classrooms** – provides support and training for the university's media-enhanced classrooms.
- **Media Center** – provides media presentation equipment to campus and off-campus users.
- **Telephone Services** – provides complete telephony communication service and infrastructure support.
- **Enterprise Applications** – provides database administration and development services for the University's ERP application and web site content management systems; as well as custom development for web-based administrative applications.
- **Network and Systems** – provides network and server-based services including: Internet access, high-speed campus data network, wide-area network connecting university sites across Idaho, server-based personal and shared file space, Virtual Private Network (VPN), and print queues.
- **Document Imaging** – provides infrastructure for the scanning, retention, and management of documents related to university operations.
- **Vandal Card** – the Vandal Card is the official UI identification card. Uses include personal on-campus transactions at enabled locations and access to university meal plans, the Student Recreation Center, and some UI facilities.
- **Records Management** – provides physical storage along with guidance, training, and policy regarding the management and disposal of university records.
- **E-Commerce (Marketplace)** – provides managed e-commerce services to the university community, including providing payment capabilities for UI developed web applications and third-party payment integration. E-Commerce also provides banner-integrated on-line stores (UI Marketplace) for use by university colleges and departments for web-based commerce.
- The ITS web page can be found on-line at www.uidaho.edu/its. The web site has a complete service catalog which provides detailed descriptions and contact information for all the services offered by ITS.

UNIVERSITY OF IDAHO NONDISCRIMINATION POLICY

The University of Idaho has a policy of nondiscrimination on the basis of race, color, religion, national origin, sex, age, sexual orientation, gender identity/expression, disability, genetic information, or protected veteran or military status. This policy applies to all programs, services, and facilities. It includes - but is not limited to - applications, admissions, access to programs and services, employment, and advancement.

Such discrimination is prohibited by titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, sections 503 and 504 of the Rehabilitation Act of 1973, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212 and requires affirmative action to employ and advance in employment disabled veterans, the Age Discrimination Act of 1975, the Pregnancy Act of 1978, the Age Discrimination in Employment Act Amendments of 1978, the Americans With Disabilities Act of 1990, the Civil Rights Act of 1991, the Rehabilitation Act Reauthorization of 1992, federal GINA Act of 2008, and other state and federal laws and regulations and university commitments.

Sexual harassment violates state and federal law and policies of the Board of Regents. It is prohibited (see FSH 3220 (http://www.webpages.uidaho.edu/fsh/3220.html)). The University of Idaho also prohibits discrimination on the basis of sexual orientation and gender identity/expression (see FSH 3215 (http://www.webpages.uidaho.edu/fsh/3215.html)). The entire *Faculty Staff Handbook* can be accessed online at http://www.webpages.uidaho.edu/fsh/.

Questions or concerns about the content and application of these laws, regulations, or University policy may be directed to the Director of the Office of Civil Rights and Investigations (208-885-4285); Coordinator of Disability Support Services (208-885-6307); Idaho Commission on Human Rights (208-334-2873); Regional Office for Civil Rights, U.S. Department of Education in Seattle (206-220-7900); Equal Employment Opportunity Commission, Seattle District Office (206-220-6883); or Seattle Regional Office of Federal Contract Compliance Programs, U.S. Department of Labor (206-398-8000).

University of Idaho employees have a responsibility to report cases of discrimination and harassment (see FSH 3170 (http://www.webpages.uidaho.edu/fsh/3170.html)). Retaliation for bringing forward a complaint is prohibited (see FSH 3810 (http://www.webpages.uidaho.edu/fsh/3810.html)). All complaints will be investigated impartially and resolved promptly.Complaints about discrimination or harassment should be brought to the attention of the Director of the Office of Civil Rights & Investigations, Erin Agidius (Title IX and 504 Coordinator): 875 Perimeter Dr., MS 3160, Moscow, ID 83844-3160, 208-885-4285, ocri@uidaho.edu or http://www.uidaho.edu/ocri.

RESEARCH

Research is a primary function of the University of Idaho, closely related to teaching for both students and faculty members, especially at the graduate level. Hence, most classroom teaching faculty members are also actively engaged in research.

Office of Research and Economic Development

The mission of the Office of Research and Economic Development is to provide academic and administrative leadership to:

1. foster, support and inspire scholarly activity;
2. oversee ethical, managerial, and regulatory compliance of scholarly activities; and
3. ensure dissemination and application of scholarly activities. At the University of Idaho, scholarly and creative activity aspires to generate knowledge that strengthens the scientific, economic, cultural, social, and legal foundations of an open, diverse, and democratic society. Our goal is to achieve excellence in scholarship and creative activity through an institutional culture that values and promotes strong academic areas and interdisciplinary collaboration among them.

The Office of Research and Economic Development focuses on promoting research university-wide and providing assistance in writing multidisciplinary proposals and obtaining research funds. This is accomplished by organizing and promoting research activities, providing to individuals and departments information on grant opportunities from relevant groups, and processing and recording all grant and contract proposals through the Office of Sponsored Programs to ensure that policies and procedures are recognized and followed. The Office strives to increase UI's research competitiveness by offering assistance to faculty, staff, and students.

The Research Council - the faculty's standing committee involved with the development and oversight of research policy - works closely with the vice president for research and economic development to resolve differences in interpretation and implementation of these policies. Additionally, the council acts as the peer review board in the university's internal competitive grants programs.

Idaho Research Foundation

The Idaho Research Foundation, Inc. (IRF) is a private nonprofit corporation organized for the purpose of supporting research at the university. Its principal activity is licensing technologies resulting from academic research to the private sector. The IRF identifies and protects the intellectual property developed at the University of Idaho and transfers it to the private sector through licensing agreements in order to secure support for and further develop the university's academic, research, and service responsibilities. The IRF also disseminates scientific knowledge and technical information and encourages and assists researchers and inventors by providing the means by which their scientific discoveries may be patented, copyrighted, developed, and applied. The transfer of technology generated through UI research turns society's investment into new products and industrial processes, thus increasing Idaho's competitiveness as well as the nations.

Research Units

Research activities are many and varied, and are unique for each department and college. Certain administrative units provide an additional research function and emphasis that are, in many cases, related to the research program of the departments. Some of these units are:

Aquaculture Research Institute

The Aquaculture Research Institute (ARI), University Research Office, conducts, facilitates, supports, directs, and coordinates aquaculture research activities at the University of Idaho, at the Hagerman Fish Culture Experiment Station, and throughout the state. Through the institute, UI scientists from various disciplines conduct research in both commercial and conservation aquaculture sciences and technologies such as fish culture and production efficiency, fish breeding and genetics, fish nutrition and growth physiology, fish diseases and pathology, fish waste management and water quality assessment, aquaculture marketing and economics, and recovery efforts for endangered fish species. The ARI does not offer degrees. Rather, the ARI assists academic departments in the training of graduate-level students by providing resources and opportunities for research.

Caine Veterinary Teaching Center

The Caine Veterinary Teaching Center facility, Department of Animal and Veterinary Science, College of Agricultural and Life Sciences, is located at Caldwell, Idaho, and is staffed with scientists involved with research, extension, service, and instruction in the animal and veterinary science graduate program. It provides clinical training for WI students in veterinary medicine and is also a satellite clinical laboratory specializing in the identification, study, and control of diseases of animals used for human food.

Center for ETHICS [1]

The Center for ETHICS[1], Department of Movement Sciences, College of Education, believes in "teaching the tradition of competitive integrity to inspire leaders of character." The goal of the center is to improve moral development and character education through intervention, consultation, and leadership in advancing moral education.

[1] Ethical Theory and Honor in Competition and Sport

Center for Educational Research and Public Service

The Center for Educational Research and Public Service was established to conduct and support research and evaluation, to facilitate research by College of Education faculty members and graduate students, and to be of assistance to local school districts and to other educational institutions. The center publishes a monthly newsletter providing information on grant opportunities.

Center for Forest Nursery and Seedling Research

The Center for Forest Nursery and Seedling Research develops and demonstrates cost and environmentally effective processes for propagation, growth, and subsequent survival of forest seedlings. Processes are tested and demonstrated in a production scale nursery operation, with subsequent transfer of technology to the forest nursery industry of the region.

Center for International Training and Outreach

The Center for International Training and Outreach (CITO) functions as the College of Natural Resource's international outreach center. Its

central long-term goal is the development of a self-sufficient program of worldwide training, technical assistance and research activities focused on three related substantive areas:

1. nature-based tourism,
2. environmental interpretation, and
3. protected area management and sustainable development.

Key within CITO's functions is the cultivation of strategic linkages within organizations that can help facilitate a greater role for the UI and the College of Natural Resources in international training and outreach. Paramount in this vision is the establishment of strategic linkages and institutional partnerships with government, private firms, and international institutions of higher education.

Center for Research on Invasive Species and Small Populations

The Center for Research on Invasive Species and Small Populations (CRISSP) combines advanced techniques in molecular biology with traditional approaches to biological and ecological management, in order to maintain and enhance the integrity of our nation's native plant and animal populations. The goal of the center is to address the challenges and inform policy on invasive species and small or threatened populations. This will be accomplished by taking an integrated approach that coordinates resources and expertise for scientific research on these problems. The Center's mission also incorporates public education and outreach on invasive species and conservation biology issues. The Center contains state-of-the-art instrumentation for molecular biology and a dedicated computer laboratory, to facilitate data acquisition and analysis. Stipends for graduate study and undergraduate internships are available through the Center to students with an interest in invasive species and/or conservation biology issues.

Center for Secure and Dependable Systems

The Center for Secure and Dependable Systems (CSDS) operates as a center in the Microelectronics Research and Communications Institute (MRCI), University Research Office. This board-approved center concentrates on computer-related security education and research. The National Security Agency designated the University of Idaho in 1999 as one of the initial seven Centers of Excellence in Information Assurance Education, partly in recognition of CSDS's efforts in promoting information security education and research. This status was reapproved in 2005. The CSDS faculty conducts research in the areas of system defense, intrusion detection, critical infrastructure protection, secure protocols, network security, evolutionary algorithms, computer forensics, reliability, and fault tolerance.

Electron Microscopy Center

A campus-wide facility, including scanning and transmission electron microscopes and energy-dispersive x-ray microanalysis, is available for use in teaching, research, and service. Located in McClure Hall, this facility is available to students and faculty members. Information concerning use of the EM Center may be secured directly from the facility or through the University Research Office.

Forest, Wildlife and Range Experiment Station

The Forest, Wildlife and Range (FWR) Experiment Station is the research arm of the College of Natural Resources. Its staff includes all members of the college faculty, full-time research associates and technicians, and graduate students. The station staff conducts research on a wide variety of natural resource management problems in the areas of forestry, forest products, range, wildland recreation, wildlife, and fisheries. Because many of the graduate students enrolled in the college are on assistantships associated with station projects, the programs of the experiment station are closely connected with the college's graduate education mission.

Hagerman Fish Culture Experiment Station

The Hagerman Fish Culture Experiment Station is located in the heart of Idaho's aquaculture industry in the Magic Valley and its focus is on rainbow trout. Most of Idaho's large commercial aquaculture operations are located nearby and the close proximity of the research facility provide opportunities for industry partnerships in aquaculture research.

The Hagerman Station is a field laboratory of the College of Agricultural and Life Sciences, and is a part of the Aquaculture Research Institute. UI scientists from various disciplines conduct research at the station in both commercial and conservation aquaculture sciences and technologies. The Hagerman Station has both exceptional water resources supporting its wet laboratories and outdoor fish culture systems and leading edge analytical resources supporting functional genomics in association with nutrition, immune function, growth, reproduction, and marker-based breeding programs for rainbow trout. The Hagerman Station also hosts USDA Agriculture Research Service scientists who contribute to UI research, educational and extension programs. Idaho Springs, a nearby commercial-scale trout farm, is operated by the Hagerman Station as a research farm where large-scale trials and long-term broodstock holding can be conducted. Scientists at the station are deeply involved in recovery efforts for Idaho's endangered fish species, and in assessment of threatened stocks and species. These efforts are often done in partnership with state and federal agencies, and with the Columbia River Inter-Tribal Fish Commission, and other tribal entities.

The Hagerman Station works closely with Idaho's aquaculture extension educator, who is nearby in Idaho's Magic Valley. Through this collaboration and that with other UI faculty and staff throughout the state, a variety of outreach activities designed to educate the public and support and promote aquaculture are pursued.

Idaho Agricultural Experiment Station

The Idaho Agricultural Experiment Station is the research arm of the College of Agricultural and Life Sciences. Applied and fundamental research programs provide a technological base to assist the agricultural industries and rural development in the state and region. Graduate education at the M.S. and Ph.D. levels is an integral part of most research projects. Research Centers located at Aberdeen, Boise, Caldwell, Dubois, Kimberly, Moscow, Parma, Sandpoint, Salmon/Carmen, Tetonia, Post Falls, and Twin Falls provide opportunities to conduct locally-relevant applied and basic research. Off-campus research centers represent a significant component of the college's and university's research capacity in terms of personnel, facilities and experimental land resources. Over 40 of the college's research faculty and over 100 research support staff are stationed at these centers. Facilities have an experiment land resource exceeding 4,000 acres. Cooperative research programs involving a number of USDA Agricultural Research Service scientists and Federal laboratory facilities exist at Aberdeen, Dubois, Kimberly, Moscow, and Parma.

Idaho Cooperative Fish and Wildlife Research Unit

The cooperative program involving UI, College of Natural Resources, the U.S. Geological Survey, and the Wildlife Management Institute in Washington, D.C., conducts research to find answers to a broad spectrum of questions relating to the management and viability of fish and wildlife resources. Issues addressed are of local, national, and international

interest. Graduate students are trained at both the master's and doctoral levels. The unit provides in-service training for new and established conservation agency employees and provides technical assistance and information to the public and to federal and state organizations.

Idaho Cooperative Park Studies Unit

The UI Cooperative Park Studies Unit in the College of Natural Resources applies the results of sociological and biological research to the management of parks, preserves, and recreation areas. Because major funding comes from the National Park Service, the unit has a primary responsibility to conduct research related to the mission of the NPS and the management of the national park system. An important responsibility of the unit is technical assistance to park staffs, working directly with resource managers to help solve management problems.

Idaho Forest, Wildlife and Range Policy Analysis Group

The Idaho Forest, Wildlife and Range Policy Analysis Group is a research program of the Idaho Forest, Wildlife and Range Experiment Station, College of Natural Resources, created by the Idaho legislature to provide timely and objective analyses of natural resource issues of importance to the citizens of Idaho. Graduate students are involved in specific short-term tasks to support policy analysis projects.

Idaho Geological Survey

Established in 1919, the Idaho Geological Survey is the state's lead agency for collecting, interpreting, and disseminating all scientific information on the geology and mineral resources of Idaho. As a research unit of the University of Idaho, the Idaho Geological Survey's main office is at the Moscow campus. The Survey also has branch offices in Pocatello at Idaho State University and in Boise at Boise State University and the Idaho Water Center. A staff of geologists conducts applied research with a strong emphasis on producing geologic maps and providing technical and general information to the public.

Cooperative projects between the Survey, state universities, and other academic, state, and federal institutions, including the U.S. Geological Survey, enhance research productivity and educational outreach. The Survey addresses public inquiries through an expert staff, reference collections, comprehensive Web site (www.idahogeology.org (http://www.idahogeology.org)), and sales of its books and maps. The Survey directs its activities at the broad interests of the state's citizens, teachers and students of earth science, the mineral industry, land developers, land-use planners, scientific researchers, and city, county, state, and federal agencies.

Idaho Water Resources Research Institute

The Idaho Water Resources Research Institute, University Research Office, was established at UI by the regents on October 24, 1963. The national institute program is administered by the United States Geological Survey of the U.S. Department of the Interior to stimulate, sponsor, coordinate, and supplement research, education, and outreach programs in the field of water resources. The institute serves the state by developing and coordinating water research programs intended to assure the state, region, and nation adequate supplies of high-quality water.

The area of water resources planning, development, and management is a composite of many disciplines. Consequently, the Idaho Water Resources Research Institute believes that professional needs in these areas are best achieved by individuals with strong basic education in a traditional academic department enhanced by programs of study in water resources problems and professional practice. The university has developed procedures that encourage existing schools and departments to strengthen their programs in light of the special needs for water resources. The Idaho Water Resources Research Institute has coordinated masters and doctoral programs in several disciplines and specializations through various participating divisional programs.

The objectives of the institute are to:

1. promote water resources research and coordinate the efforts of the various university divisions and departments involved in water resources research;
2. strengthen and coordinate water-related undergraduate and graduate programs and course offerings so that the university can supply well-trained professionals and leaders;
3. develop, gather, and disseminate research findings within the state universities and to various federal, state, local, and civic organizations interested in water resources;
4. promote water education for both the youth and adult community within Idaho.

Inland Empire Tree Improvement Cooperative

The Inland Empire Tree Improvement Cooperative in the College of Natural Resources includes all of the major commercial timber holding agencies in the Inland Northwest. The cooperative's main function is genetic improvement of five forest tree species. Substantial research opportunities are available in the delineation of genetic patterns and prediction of genetic gains in the five programs. Results of such research have the potential for immediate application in operation programs.

Institute for Bioinformatics and Evolutionary Studies (IBEST)

The Institute for Bioinformatics and Evolutionary Studies (IBEST) is an interdisciplinary research group at the University of Idaho focused on understanding the patterns and processes of evolution that occur over comparatively short periods of time. The hallmarks of IBEST research are the coupling of empirical and theoretical research, and a strong orientation toward rigorous testing of hypotheses. They place a high value on interdisciplinary collaborations that blend the expertise of biologists, biochemists, ecologists, evolutionary biologists, mathematicians, statisticians, and computer scientists to examine the underpinnings of evolutionary biology.

Intermountain Forest Tree Nutrition Cooperative

The Intermountain Tree Forest Nutrition Cooperative in the College of Natural Resources includes the major state, federal, and private forest management organizations throughout the Inland Northwest. The cooperative's main function is the support of research dealing with the nutritional management of forests. Results of such research have the potential for application in forest management programs.

James A. and Louise McClure Center for Public Policy Research

The Bureau of Public Affairs Research has been renamed the James A and Louise McClure Center for Public Policy Research. Building on almost fifty years of public policy research and outreach, the McClure Center is dedicated to enhancing public policy development and decision-making through research and analysis, public programming, and leadership training.

Laboratory Animal Research Facility

A centrally located facility for housing and maintaining small animals for use in teaching and research is available to faculty members and

students. Information concerning space availability, use, and services provided is available through the facility itself.

Laboratory of Anthropology

The Alfred W. Bowers Laboratory of Anthropology serves as a research unit within the Department of Sociology & Anthropology, College of Letters, Arts, and Social Sciences. The three primary objectives are research, cultural resource management, and public outreach and education. Research facilities include the Pacific Northwest Anthropological Archives, the Asian American Comparative Collection, and the Crabtree Lithic Collection. As the Archaeological Survey of Idaho, Northern Repository, the Laboratory of Anthropology houses site forms and archaeological collections for the ten northern counties of Idaho. Public education projects include interactive presentations at area schools.

Martin Institute

The Martin Institute is an interdisciplinary teaching, outreach, and research center at the University of Idaho that considers the causes of war, the conditions for peace, and the international system. The Institute's strategic plan for 2011-2015 centers on providing transformational educational experiences for UI undergraduates, both within "traditional" global studies fields and across the curriculum, through administration of the undergraduate major in international studies and partnerships with the Honors Program. Funded research support on projects related to the Institute's mission is awarded annually to teams of undergraduate students and faculty selected to participate in the Martin Scholar program and to students in the Martin Academy. The Institute also publishes *The Journal of the Martin Institute | International Studies* annually, which focuses on excellent undergraduate research related to international problem solving. Funding for faculty and students involved in graduate-level research on themes related to the Institute's mission will roll out in time for the 2016-17 academic year.

National Institute for Advanced Transportation Technology

The mission of the National Institute for Advanced Transportation Technology (NIATT), University Research Office, is to develop engineering solutions (knowledge and technology) to transportation problems for the state of Idaho, the Pacific Northwest, and the United states, and to prepare our students to be leaders in the design, deployment and operation of our nation's complex transportation systems. NIATT is a university-based center of excellence established by US Department of Transportation to advance technology and expertise in the many disciplines comprising transportation through education, research and technology transfer. Three centers currently operate as part of NIATT, each with a unique mission related to transportation. The Center for Clean Vehicle Technology focuses on research to protect the natural and built environment by improving the quality and economic viability of alternative fuels and reducing the environmental impacts and improving the fuel economy and safety of motorized vehicles (including passenger cars, transit vehicles and recreational vehicles). The Center for Traffic Operations and Control conducts research concerning traffic detection, control, surveillance, simulation and optimization with the goal of reducing energy consumption, reducing congestion, and improving safety. Erosion control, bridge construction, and pavement design, as well as planning methods, design practices, and software development fall under the auspices of the Center for Transportation Infrastructure. NIATT provides opportunities for graduate and undergraduate students to participate in research supported by the University Transportation Centers program, the Idaho Transportation Department, the Federal Highway Administration, and others.

Potato Center of Distinction

The Center encompasses research programs on development of new cultivars in concert with USDA-ARS potato germplasm program; development and refinement of production methods; development on insect, disease, and weed germplasm program; development and refinement of storage methods; and utilization of potato products. The Center's education program includes extension programming focusing on variety choice, crop production, pest management, storage, and processing. The Center also includes utilization and pesticide residue testing, research on genetic manipulation of the potato, and economic research.

Rangelands Center

The Rangelands Center strives to create insight and foster understanding for the stewardship of rangelands. Rangelands cover half of Idaho, half the West, and half the earth's land surface. Therefore, rangelands affect the ecological health and economic livelihood of our state and region. The innovative design of the Rangeland Center promotes active partnerships with individuals, organizations and communities who work and live on the vast landscapes known as rangelands. The Rangeland Center is a group of 23 researchers and outreach specialists with expertise in disciplines that affect rangeland management and conservation including grazing, rangeland ecology, entomology, soil science, economics, rural sociology, fish and wildlife resources, invasive plants, forage production, animal science, wildland fire, restoration and the use of spatial technologies to understand rangelands. Center research and outreach efforts are aimed at creating science and solutions for the range.

Reveley Geospatial Learning Center

The Reveley Geospatial Learning Center, College of Natural Resources, was formed to encourage, facilitate, and coordinate, on an interdisciplinary basis, remote sensing and geographic information system (GIS) research at UI. The unit maintains "state of the art" computing hardware, software, and field equipment for project support. Research funding comes from a variety of sources including NASA, USFS, and commercial forest industries, among others. Most research projects utilize graduate students as essential elements in both data acquisition and interpretation. These projects often form the basis of either a thesis or dissertation.

Rocky Mountain Cooperative Ecosystem Studies Unit

The Rocky Mountain Cooperative Ecosystem Studies Unit, College of Natural Resources, is a university-federal agency partnership involving the University of Idaho, University of Montana, Montana State University, Salish Kootenai College, Utah State University, Washington State University, and federal land management agencies. The mission of this unit is to improve the scientific base for managing ecosystems in the rapidly changing social, cultural, and environmental landscape of the Rocky Mountain Region. The unit provides research, technical assistance, and training programs for federal partners and provides support for faculty and graduate student ecosystem studies programs.

Rocky Mountain Forest Experiment Station

The Rocky Mountain Forest Experiment Station, College of Natural Resources, with facilities on the UI campus, is a research branch of the USDA Forest Service. It conducts research in silviculture, forest health, forest genetics, and watershed management. The station provides

funding to UI faculty and graduate students to pursue forestry and watershed management sciences.

Snake River Conservation Research Center

The Snake River Conservation Research Center at Kimberly, Idaho, has been developed as a cooperative facility between UI and the U.S. Department of Agriculture. USDA scientists specialize in research to improve soil and water management practices and to contribute to a better understanding of basic soil processes. Programs are focused on systems and practices that improve irrigation uniformity, efficiency, and crop yields; decrease costs and energy; and reduce soil erosion. Collaborative research projects between the USDA and UI specialists provide graduate students the opportunity to work closely with experts in both agencies and to utilize expanded facilities. USDA scientists hold affiliate faculty rank and may assist in directing student research projects and serve on graduate committees.

Statistics Consulting Center

The Statistics Consulting Center, College of Science, provides assistance in the design of experiments and sample surveys, advice on statistical analyses, and expertise on recent developments in statistical research. Proper statistical design and analysis play a key role in producing quality research within the university. The optimal time to seek statistical consulting is during the earliest stages of the research project, and certainly before any data collection stage. Faculty members and graduate students from any discipline are welcome. The center is located on the fourth floor of Brink Hall and operates a free walk-in clinic. Faculty are also available by appointment.

DEGREES GRANTED

On completion of specific courses of study and recommendation of the faculty, the degrees listed below are granted by the Regents of the University of Idaho.

Baccalaureate Degrees

- Bachelor of Arts, B.A.
- Bachelor of Fine Arts, B.F.A.
- Bachelor of General Studies, B.G.S.
- Bachelor of Interior Architecture and Design, B.I.A.D.
- Bachelor of Music, B.Mus.
- Bachelor of Science, B.S.
- Bachelor of Science in
  - Agricultural and Life Sciences, B.S.Ag.L.S.
  - Agricultural Economics, B.S.Ag.Econ.
  - Agricultural Education, B.S.Ag.Ed.
  - Animal and Veterinary Science, B.S.A.V.S.
  - Architecture, B.S.Arch.
  - Art Education, B.S.Art Ed.
  - Biochemistry, B.S.Biochem.
  - Business, B.S.Bus.
  - Chemical Engineering, B.S.Ch.E.
  - Civil Engineering, B.S.C.E.
  - Computer Engineering, B.S.Comp.E.
  - Computer Science, B.S.C.S.
  - Dance, B.S.Dan.
  - Early Childhood Development and Education, B.S.Erly.Chldhd.Dev.Ed.
  - Ecology and Conservation Biology, B.S.Ecol.-Cons.Biol.
  - Education, B.S.Ed.
  - Electrical Engineering, B.S.E.E.
  - Environmental Science, B.S.Env.S.
  - Exercise, Sport, and Health, B.S.E.S.H.
  - Family and Consumer Sciences, B.S.F.C.S.
  - Fire Ecology and Management, B.S.Fire.Ecol.Mgmt.
  - Fishery Resources, B.S.Fish.Res.
  - Food Science, B.S.F.S.
  - Forestry, B.S.Foretry.
  - Landscape Architecture, B.S.L.A.
  - Materials Science and Engineering, B.S.M.S.E.
  - Mechanical Engineering, B.S.M.E.
  - Microbiology, B.S.Microbiol.
  - Molecular Biology and Biotechnology, B.S.M.B.B.
  - Natural Resource Conservation, B.S.Nat.Resc.Consv.
  - Plant Science, B.S.Pl.Sc.
  - Rangeland Conservation, B.S.Rangeland.Consv.
  - Recreation, B.S.Rec.
  - Renewable Materials, B.S.Renew.Mat.
  - Soil and Water Systems, B.S.S.W.S.
  - Technology, B.S.Tech.
  - Wildlife Resources, B.S.Wildl.Res.

Master's Degrees

- Master of Accountancy, M.Acct.
- Master of Architecture, M.Arch.
- Master of Arts, M.A.
- Master of Arts in Teaching, M.A.T.
- Master of Business Administration, M.B.A.
- Master of Education, M.Ed.
- Master of Engineering, M.Engr.
- Master of Fine Arts, M.F.A.
- Master of Landscape Architecture, M.L.A.
- Master of Music, M.Mus.
- Master of Natural Resources, M.N.R.
- Master of Public Administration, M.P.A.
- Master of Science, M.S.
- Master of Science in Athletic Training, M.S.A.T.
- Professional Science Master, P.S.M.

Education Specialist Degrees

- Education Specialist, Ed.S.
- Education Specialist in Educational Leadership, Ed.S.Ed.Ldrshp.

Professional Degree in Law

- Juris Doctor, J.D.

Doctoral Degrees

- Doctor of Athletic Training, D.A.T.
- Doctor of Education, Ed.D.
- Doctor of Philosophy, Ph.D.

ACADEMIC OFFERINGS AT THE UNIVERSITY OF IDAHO

Programs offered by the university are shown in the list below. After a student has completed the requirements for a degree, the degree name and, if not already a part of the degree name, the major curriculum as shown in this list are printed on the student's diploma. (Options listed under some curricula are areas of concentration within the major. Options, emphases, academic minors, and academic certificates are recorded only on the student's final transcript.

Program	Bachelor	Master	Educatio Specialis	Doctoral	Academi Minor	Academi Certificat	Offered Online
Accountancy (p. 158)		M.Acct.					
Accounti (p. 157)	B.S.Bus.				Minor		
Addictions (p. 287)					Minor		
Adult/ Organiza Learning and Leadersh (p. 191)		M.S.					M.S.
Advanced Materials Technology (p. 204)						Certificate	
Advertisi (p. 269)	B.A. B.S				Minor		
Aerospace Studies (p. 368)					Minor		
Africana Studies (p. 291)					Minor		
Aging Studies (p. 250)					Minor		
Agribusir (p. 112)					Minor		
Agricultural Economics (p. 112)	B.S.Ag.Econ.						
Agricultu Educatio (p. 110)	B.S.Ag.E	M.S.					
Agricultural Extension Education (p. 110)					Minor		
Agricultu Commod Risk Manager (p. 112)						Certificat	
Agricultural Communications and Leadership (p. 112)					Minor		
Agricultu Science, Commun and Leadersh (p. 110)	B.S.Ag.L.						
Agricultural Systems Management (p. 133)	B.S.W.S.				Minor		
Americar Indian Studies (p. 251)					Minor		
American Studies (p. 254)					Minor		
Analog Integrate Circuit Design (p. 215)						Certificat	Certificate
Animal Physiology (p. 116)				Ph.D.			
Animal Science (p. 115)		M.S.			Minor		
Animal and Veterinary Science (p. 115)	B.S.A.V.S						
Anthropc (p. 291)	B.A. B.S.	M.A.			Minor		
Apparel, Textiles and Design (p. 120)	B.S.F.C.S.						
Applied Economi (p. 120)		M.S.					
Aquaculture (p. 309)					Minor		
Archaeol Technici (p. 291)						Certificat	
Architecture (p. 143)	B.S.Arch.	M.Arch.			Minor		
Art (p. 143)	B.A.	M.F.A			Minor		

Asian Studies (p. 260)					Minor			
Athletic Leadersh (p. 193)							Certificat	
Athletic Training (p. 193)		M.S.A.T		D.A.T				
Biochem (p. 333)	B.S.Biocl				Minor			
Bioethics (p. 283)					Minor			
Bioinforn and Computa Biology (p. 339)		M.S.		Ph.D.			Certificat	
Biological Engineering (p. 202)	B.S.	M.Engr.	M.S.	Ph.D.				
Biology (p. 333)	B.A. B.S.	M.S.		Ph.D.	Minor			
Bioregional Planning and Community Design (p. 154)		M.S.					Certificate	
Biotechn and Plant Genomic (p. 128)	B.S.Pl.Sc				Minor			
Broadcast and Digital Media (p. 269)	B.A.	B.S.			Minor			
Business (p. 160)					Minor			
Business Analytics (p. 160)					Minor			
Business Economi (p. 160)	B.S.Bus							
Career and Technical Education (p. 173)	B.S.Ed.							
Chemica Engineer (p. 204)	B.S.Ch.E	M.Engr.	M	Ph.D.				
Chemistry (p. 342)	B.S.	M.S.		Ph.D.	Minor			
Child, Family, and Consume Studies (p. 120)	B.S.F.C.S							
Civil Engineering (p. 209)	B.S.C.E.	M.Engr.	M.S	Ph.D.				M.Engr.
Climate Change (p. 345)							Certificat	
Communication (p. 287)	B.A.	B.S.			Minor			
Compara Internati Politics (p. 283)					Minor			
Computer Engineering (p. 215)	B.S.Comp	M.Engr. M.S.						M.Engr. M.S.
Compute Science (p. 212)	B.S.C.S.	M.S.		Ph.D.	Minor			M.S.
Creative Writing (p. 254)		M.F.A.			Minor			
Critical Infrastru Resilienc (p. 224)							Certificat	
Crop Management (p. 128)	B.S.Pl.Sc.				Minor			
Crop Science (p. 128)	B.S.Pl.Sc				Minor			
Culturally Responsive Pedagogy and Universal Design (p. 173)							Certificate	
Curriculu and Instructi (p. 174)		M.Ed.	Ed.S.					M.Ed. Ed.S.
Cybersecurity (p. 212)							Certificate	
Dance (p. 193)	B.S.Dan.				Minor			
Data Analytics (p. 357)							Certificate	
Diversity and Inclusion (p. 291)							Certificat	

Early Childhood Development and Education (p. 120)	B.S.Erly Chldhd.Dev.Ed.					
Ecology and Conserva Biology (p. 313)	B.S.Ecol.					
Ecology (p. 313)				Minor		
Economi (p. 160)	B.A. B.S.			Minor		
Education (p. 191)			Ed.D. Ph.D.			
Educatio Leadersh (p. 191)		M.Ed.	Ed.S.Ed.L		M.Ed.	Ed.S.Ed.Ldrshp.
Electrical Engineering (p. 215)	B.S.E.E.	M.Engr. M.S.	Ph.D.		M.Engr. M.S.	
Elementa Educatio (p. 173)	B.S.Ed.					
Emergency Planning and Management (p. 223)				Certificate		
Engineer Manager (p. 225)		M.Engr.			M.Engr.	
English (p. 254)	B.A.	M.A.		Minor		
Entomol (p. 118)	B.S.Ag.L.	M.S.	Ph.D.	Minor		
Entrepreneurship (p. 160)				Certificate		
Environm Commun (p. 326)				Minor		
Environmental Education and Science Communication (p. 326)				Certificate	Certificate	
Environm Science (p. 302)	B.S.Env.S	M.S.	Ph.D.			
Environmental Soil Science (p. 133)	B.S.E	M.S.				
Exercise, Sport, and Health Sciences (p. 193)	B.S.E.S.H					
Experimental Psychology (p. 288)			Ph.D.			
Family and Consume Sciences (p. 121)		M.S.				
Film and Television Studies (p. 269)	B.A. B.S.					
Finance (p. 160)	B.S.Bus.					
Fire Ecology and Management (p. 313)	B.S.FireEcol.Mgmt.			Minor		
Fire Ecology, Manager and Technolo (p. 316)					Certificat	Certificate
Fire Safety (p. 223)					Certificate	
Fishery Resource (p. 309)	B.S.Fish.			Minor		
Food and Nutrition (p. 120)	B.S.F.C.S.					
Food Science (p. 125)	B.S.F.S.	M.S.	Ph.D.	Minor		
Forest Operations (p. 313)				Minor		
Forestry (p. 313)	B.S.Fores					
Forest Resources (p. 313)				Minor		
French (p. 260)	B.A.			Minor		
General Management (p. 160)		M.B.A				
General Studies (p. 260)	B.G.S.					B.G.S.

Geographic Information Systems (p. 345)				Certificate		
Geograph (p. 345)	B.S.	M.S.	Ph.D.			
Geological Engineering (p. 209)		M.S.			M.S.	
Geologic and Mining Engineer (p. 209)				Minor		
Geological Sciences (p. 347)	B.S.					
Geology (p. 347)		M.S.	Ph.D.	Minor		
German (p. 260)				Minor		
History (p. 265)	B.A. B.S.	M.A.	Ph.D.	Minor	B.A. B.S.	
Horticulture (p. 128)				Minor		
Horticult and Urban Agricultu (p. 128)	B.S.	Pl.Sc				
Human Resource Development (p. 191)				Certificate		
Human Safety Performa (p. 223)				Certificat		
Industrial Technology (p. 223)	B.S.	Tech.				
Integrate Architect and Design (p. 147)		M.S.				
Interdisciplinary Studies (p. 268)	B.A.	B.S. M.A. M.S.		Minor		
Interior Architect and Design (p. 143)	B.I.A.	D.		Minor		
International Business (p. 160)				Minor		
Internati Studies (p. 260)	B.A.			Minor		
Jazz Studies (p. 273)				Minor		
Journalis (p. 269)	B.A.	B.S.		Minor		
Justice Studies (p. 291)				Minor		
Landsca Architect (p. 143)	B.S.	L.A.	M.L.A.	Minor		
Latin American Studies (p. 273)	B.A.					
Law (p. 241)			J.D. LL.M.			
Management and Human Resources (p. 160)	B.S.	Bus.				
Manager Informati Systems (p. 160)	B.S.	Bus.				
Marketing (p. 160)	B.S.	Bus.		Minor		
Materials Science and Engineer (p. 204)	B.S.	M.S. I	M.S.	Ph.D.	Minor	
Mathema (p. 349)	B.S.		M.A.T. M.S.	Ph.D.	Minor	M.A.T
Mechani Engineer (p. 226)	B.S.	M.E.	M.Engr. M.S.	Ph.D.	Minor	M.Engr.
Medical Education (WWAMI) (p. 367)						
Medical Sciences (p. 333)	B.S.					
Metallurgical Engineering (p. 204)			M.S.		Minor	
Microbio (p. 333)	B.S.	Micr			Minor	

Microbiology, Molecular Biology and Biochemistry (p. 333)			Ph.D.			
Military Science (p. 369)				Minor		
Modern Language Business (p. 260)	B.A.					
Molecula Biology and Biochem (p. 333)				Minor		
Molecular Biology and Biotechnology (p. 333)	B.S.	M.B.B.				
Movemer and Leisure Sciences (p. 193)		M.S.				
Music (p. 273)	B.A. B.S.	M.A. M.Mus.		Minor		
Music Educatio (p. 273)	B.Mus.			Minor		
Music: Business (p. 273)	B.Mus.					
Music: Composi (p. 273)	B.Mus.					
Music: Performance (p. 273)	B.Mus.					
Musical Theatre (p. 273)				Minor		
Natural Resources (p. 321)		M.N.R. M.S	Ph.D.	Minor		M.N.R
Natural Resource and Environm Law (p. 248)					Certificat	
Natural Resources and Environmental Science (p. 303)		P.S.M.				
Natural Resource Conserva (p. 326)	B.S.Nat.F			Minor		
Natural Resource Economics (p. 112)				Minor		
Naval Science (p. 369)				Minor		
Neuroscience (p. 333)		M.S.	Ph.D.			
Nuclear Criticality Safety (p. 230)					Certificat	
Nuclear Engineering (p. 230)		M.Engr. M.S.	Ph.D.			
Nuclear Technica Manager (p. 230)					Certificat	Certificate
Operations Management (p. 160)	B.S.Bus.					
Organiza Dynamic (p. 281)					Certificat	
Organizational Sciences (p. 281)	B.A. B.S.					B.A. B.S.
Outdoor Recreatic Leadersh (p. 193)				Minor		
Parks, Protected Areas, and Wilderness Conservation (p. 326)				Minor		
Philosop (p. 283)	B.A. B.S.	M.A.		Minor		
Philosophy, Politics and Economics (p. 283)				Minor		

Physical Educatio (p. 193)		M.Ed.				M.Ed.
Physics (p. 352)	B.A. B.S.	M.S.		Ph.D.	Minor	
Plant Patholog (p. 118)		M.S.				
Plant Protection (p. 118)					Minor	
Plant Science (p. 129)		M.S.		Ph.D.		
Political Science (p. 283)	B.A. B.S.	M.A.		Ph.D.	Minor	
Power System Protectio and Relaying (p. 217)					Certificat	Certificate
Pre-Health Professions Studies (p. 356)					Minor	
Professic Writing (p. 254)					Minor	
Psychology (p. 287)	B.A. B.S.	M.S.			Minor	B.A. B.S. M.S.
Public Administ (p. 283)		M.P.A.				M.P.A.
Public Relations (p. 269)	B.A. B.S.				Minor	
Rangelar Conserva (p. 313)	B.S. Rang Consv.					
Rangeland Ecology and Management (p. 313)					Minor	
Recreatic Sport, and Tourism Manager (p. 193)	B.S. Rec.					
Rehabilitation Counseling Category R (p. 191)						Certificate
Rehabilit Counseli and Human Services (p. 191)		M.Ed. M.S.				
Religious Studies (p. 290)					Minor	
Remote Sensing of the Environm (p. 326)						Certificat
Renewable Materials (p. 313)	B.S. Renew.Mat.				Minor	
Sale Manager (p. 160)					Minor	
Secondary Education (p. 173)	B.S.Ed.					
Secure and Dependa Computi Systems (p. 213)						Certificat Certificate
Sociology (p. 291)	B.A. B.S.				Minor	B.A. B.S.
Soil and Land Resource (p. 134)		M.S.		Ph.D.		
Soil Science (p. 133)					Minor	
Spanish (p. 260)	B.A.				Minor	
Special Education (p. 174)		M.Ed.				M.Ed.
Statistica Science (p. 357)		M.S.				M.S.
Statistics (p. 357)	B.S.				Minor	Certificate
Studio Art and Design (p. 143)	B.F.A.					
Sustainable Food Systems (p. 133)	B.S.Ag.L.S.					

Sustaina Tourism and Leisure Enterpris (p. 193)			Minor		
Teaching English as a Second Language (p. 254)		M.A.	Minor		
Technica Workforc Training (p. 173)				Certificat	
Technology Management (p. 224)		M.S.			M.S.
Theatre Arts (p. 297)	B.A. B.F.A. B.S.	M.F.A.			
Theatre Design and Technology (p. 297)			Minor		
Theatre Performa (p. 297)			Minor		
Trading and Capital Management (p. 160)				Certificate	
Tribal Natural Resource Stewards (p. 309)				Certificat	
Urban Design (p. 154)				Certificate	
Virtual Technolo and Design (p. 143)	B.S.				
Vocal-Instrumental Music Education (p. 273)			Minor		
Water Resource (p. 138)		M.S.	Ph.D.		
Water Science and Management (p. 133)	B.S.S.W.S.				
Wildlife Resource (p. 309)	B.S.Wildl		Minor		
Women's, Gender and Sexuality Studies (p. 299)			Minor		

STUDENT SERVICES

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ADMISSION TO THE UNIVERSITY

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Information about the undergraduate admission process and application forms are available from the Office of Admissions or online at www.uidaho.edu/admissions. Applicants for admission to the university must present satisfactory evidence of good character.

Application Procedures

All applicants for admission are required to submit:

1. The appropriate, completed application form (i.e., undergraduate, non-degree, or international). Failure to list all institutions attended or submission of inaccurate transcripts or other supporting documents as specified on the application form is considered fraud and subjects the applicant to immediate cancellation of his or her registration and/or dismissal from the university.
2. Official transcripts from the last high school and all colleges or universities attended. (See sections on first-year, transfer, non-degree, or international admission requirements for further details.) **Transcripts submitted in support of an application must be official and must be sent directly to the Office of Admissions by the issuing institution. Transcripts received become the property of the university and cannot be returned, copied, or forwarded.** Official transcripts must be signed by the registrar, superintendent, principal, or other authorized official of the school.
3. Applicants who are still in high school should apply during their senior year and should ask their high school counselor to send a copy of their current transcript and ACT or SAT scores to the Office of Admissions. If qualified, the applicant will be given an early notice of acceptance based on this record. Final acceptance will be granted when the university receives a final transcript mailed directly from the high school verifying that the applicant has graduated from a regionally accredited high school and has satisfied all admission requirements.
4. Scores from the College Board (SAT) or the American College Testing Program (ACT) if applying for admission to the freshman class. This includes transfer applicants with fewer than 14 transferable semester credits. International applicants are not required to submit ACT or SAT scores.
5. A non-refundable application fee of $60 for domestic applicants, $70 for international applicants, and $30 for applicants seeking readmission. Review of the application will be delayed until this fee is received. This fee is not charged to students applying for non-degree admission.

Application Deadlines. To provide time for evaluation and for notice of acceptance to reach the applicant, applications and credentials should be submitted to the Office of Admissions at least three weeks prior to the beginning of classes. International applicants have different deadlines (see "International Admission Requirements").

Priority Dates

Because funds are limited, to receive priority consideration for all available funds, student applicants must submit the Free Application for Federal Student Aid (FAFSA) to the federal processor by the priority date each year. The priority date for 2019-2020 is December 1. This priority date applies to incoming and continuing students, and students starting both fall and spring semesters. The link to the FAFSA page can be found on the Financial Aid homepage, https://www.uidaho.edu/financial-aid. In addition to the FAFSA, students who are new to the university must also have a complete application for admission on file by the December 1 priority date. Students who meet both priority dates will receive first consideration for funds for which they qualify. Students who do not meet both priority dates will still be considered for the guaranteed scholarship programs, Federal Pell Grants, and Federal Direct Loans which are available throughout the year.

Enrollment

Financial aid during the academic year is usually awarded in expectation of full-time enrollment: 12 credits per semester for undergraduate students, 10 credits per semester for law students, and 9 credits per semester for graduate students. If a student is receiving aid as a full-time student, he or she must be registered as a full-time student to receive the aid on the first day of class. Students are required to enroll full-time to receive scholarships, unless the donor specifies special circumstances allowing part-time enrollment. All students must enroll at least half-time (6 credits per semester for undergraduate students or 5 credits per semester for graduate and law students) to be eligible for Direct Loans. Students must be enrolled in the required number of credits through the 10^{th} day of classes (census date) of the semester to continue receiving financial aid and scholarships for the semester.

For federal loan eligibility determinations, the following enrollment classifications will be used. Undergraduate enrollment will be 6-8 credits for half-time, 9-11 credits for three quarter time, and 12 or more credits for full time. Graduate enrollment will be 5-6 credits for half time, 7-8 credits for three quarter time, and 9 or more credits for full time. Law enrollment will be 5-6 credits for half time, 7-9 credits for three quarter time, and 10 or more credits for full time.

Notification of Admission. When all of an applicant's credentials have been received and he or she has been found eligible, a letter of acceptance will be sent. Acceptance is granted for a specified semester or summer session. If an applicant does not register for the term for which he or she applied and was accepted, it will be necessary to file a new application if entrance at a later time is desired.

First-Year Admission Requirements

First-year applicants graduating from high school prior to 1995 must meet the requirements in effect for their graduation year. A degree-seeking applicant applying directly from high school or with fewer than 14 semester credits of transferable college work earned after high school graduation must:

1. Submit ACT or SAT scores.
2. Graduate from a regionally accredited high school with a combination of cumulative GPA[1] and test scores[2] as defined in the following table:

High School GPA	ACT Composite	SAT Verbal + MATH
3.00 - 4.00	Any test score	Any test score
2.60 - 2.99	15 - 36	740 - 1600
2.50 - 2.59	17 - 36	830 - 1600
2.40 - 2.49	19 - 36	910 - 1600
2.30 - 2.39	21 - 36	990 - 1600
2.20 - 2.29	23 - 36	1070 - 1600

[1] Unweighted

[2] Written sections of the test not required for admission.

3. Complete specified high school courses with a minimum 2.00 GPA as listed below. A credit is defined as a course taken with a minimum of 70 hours of classroom instruction. A high school credit can be counted in only one category.
   a. **English:** A minimum of 8 credits (4 years), selected from composition and literature courses or courses that integrate composition, language, and literature.
   b. **Mathematics:** A minimum of 6 credits (3 years) including algebra I or applied math I, geometry or applied math II, and algebra II. An additional 2 credits are strongly recommended. Other courses may include probability, discrete math, analytic geometry, calculus, statistics, and trigonometry. **Four of the required mathematics credits must be taken in the 10th, 11th, and 12th grades.**
   c. **Social Science:** A minimum of 5 credits (2 ½ years), selected from American government (state and local), geography, U.S. history, world history, psychology, sociology, and economics (consumer economics courses approved by the Idaho State Board of Education may be counted toward this requirement).
   d. **Natural Science:** A minimum of 6 credits (3 years), selected from anatomy, biology, chemistry, geology, earth science, physical science, physiology, physics, zoology, and applied science courses jointly approved by the State Department of Education (SDOE) and the State Department of Professional-Technical Education (DSPTE) (maximum of two credits in this category). Ecology will count if SDOE approved. At least two credits must involve laboratory science experience. Note: A laboratory science course is defined as one in which at least one class period each week is devoted to providing students the opportunity to manipulate equipment, materials, or specimens; develop skills in observation and analysis; and discover, demonstrate, illustrate, or test scientific principles or concepts.
   e. **Humanities/Foreign Language:** A minimum of 2 credits (1 year), selected from literature, history, philosophy, foreign language, fine arts, and interdisciplinary humanities (related study of two or more of the traditional humanities disciplines). These courses should emphasize history, appreciation, theory, analysis, and/or critique. History courses beyond those required for state high school graduation may be counted. Foreign language study is strongly recommended. Native American language (five Idaho tribes) may meet this requirement if taught by certified high school faculty.
   f. **Other College Preparation:** A minimum of 3 credits (1 ½ years), of which no more than one credit may be in speech or debate (debate must be taught by a certified teacher). Other courses may include studio/performing arts (art, dance, drama, and music) or foreign language (beyond any foreign language credit applied in the humanities/foreign language category). May include no more than two credits in SDPTE-approved classes in agricultural science and technology, business and office education, health occupations education, family and consumer sciences education, occupational family and consumer science education, trade, industrial, and technical education, and individualized occupational training.
   Applicants with fewer than 14 semester hours of transfer credit completed after high school graduation must meet both first-year and transfer admission requirements, including submission of the required test scores. (See "First-Year Admission Requirements" above.)

Students who have participated in running start, dual credit or accelerated learning programs who concurrently enroll in college credit courses while still in high school need to meet first-year requirements for admission and submit all of the appropriate high school documentation regardless of the number of transferable credits completed. See First-Year Admission Requirements.

If a first-year applicant does not qualify for regular admission or satisfies one of the criteria below, he or she may apply to the Admissions Committee for consideration (see Applying to the Admissions Committee).

1. Graduates from a non-accredited high school,
2. Is home schooled,
3. Obtains a General Educational Development (GED) certificate,
4. Deserves consideration because of special circumstances (i.e. disadvantaged or minority status, delayed entry, returning veteran, a talented student wishing to enter college early, and/or similar situations).

Transfer Admission Requirements

Applicants who have been enrolled in other colleges or universities accredited by one of the regional accrediting agencies, such as the Northwest Commission on Colleges and Universities, and who have satisfactorily accumulated 14 or more transferable credits after high school graduation may be admitted with advance standing as transfer students.

In addition to a completed undergraduate admission application form, transfer applicants must submit the following credentials to the Undergraduate Admissions Office:

1. Official transcripts from each college or university previously attended. To be considered official transcripts must be mailed directly to the University of Idaho Undergraduate Admissions Office by the issuing institution. **Transcripts received become the property of the university and cannot be returned, copied or forwarded.**
2. Applicants with fewer than 14 semester hours of transfer credit since high school graduation must meet both first-year and transfer admission requirements, including submission of the required test scores. (See "First-Year Admission Requirements".)
3. Students participating in running start, dual credit or accelerated learning programs who are concurrently enrolled in college credit courses while still attending high school need to meet first-year requirements for admission and submit all the appropriate high school documentation regardless of the number of transferable credits completed. See First-Year Admission Requirements.

Transfer students are selected from those applicants who present a cumulative grade-point average of at least 2.00 (C) for all college-level study attempted in all accredited colleges attended, exclusive of courses

for which credits are not allowed. Students transferring from out-of-state schools into the College of Engineering must have a cumulative grade-point average of at least 2.80. Admission of transfer students to the landscape architecture program will be based on GPA (typically limited to 2.5 or above), test scores (ACT/SAT), and a portfolio with a letter of intent submitted to the department.

Students admitted to the University of Idaho from other collegiate educational institutions must have complied with the academic regulations for continuance in the institution(s) that they have attended in addition to the academic regulations that are applied to students enrolled in this institution.

An applicant with previous college work who does not qualify for regular admission may also seek provisional acceptance by applying to the Admissions Committee for consideration (see Applying to the Admissions Committee).

Readmission Requirements

Students returning after two years from last attendance must complete an Application for Readmission and submit a $30 application fee and official transcripts from all colleges or universities attended since last enrolling at UI. (Also see regulation B-1 (p. 80)) Application forms are available online at www.uidaho.edu/admissions.

Returning students who were not in good academic standing when they left the university need to submit the above materials and follow the appropriate reinstatement procedures as stated in regulation L-4 (p. 100). Contact the Admissions Office for more information (208-885-6326, admissions@uidaho.edu).

Applying to the Admissions Committee

Applicants who do not qualify for admission to the University of Idaho may petition the Admissions Committee. Such applicants must submit to the Undergraduate Admissions Office an application for admission, the appropriate fee, all required official transcripts and test scores, three signed letters of recommendation, and a signed written statement of the student's objectives. This information should be received in the Undergraduate Admissions Office by August 1 for fall semester and December 1 for spring semester.

Students admitted through the Admissions Committee may be granted regular or provisional admission and will be subject to the regulations on academic probation, disqualification, and reinstatement (see regulation L (p. 100)). The Admissions Committee may assign provisionally admitted students a primary advisor. These students, while on provisional status, will need this advisor's approval before registering and when making any changes to their registration. They may be required to attend pre-academic planning within an office or a program of the University.

Freshmen admitted provisionally may change to regular admission status upon satisfactory completion of 14 credits, 12 of which must be in four different categories of the general education requirements (see regulation J-3 (p. 91)). Regular admission status must be attained within three semesters or the student will be dismissed, subject to the Admissions Committee's appeal procedures.

Transfer students admitted provisionally must enroll on probation, meet all conditions imposed by the committee, and complete the first semester with at least a 2.00 grade-point average or they will be dismissed, subject to the Admissions Committee's appeal procedure.

Dual Credit

Dual credit is a program authorized by the Idaho State Legislature that provides qualified high school students with an opportunity to receive both high school and university credit for classes taken at the University of Idaho. High school students are eligible if they are at least 16 years old before the first day of class in any semester OR they have completed at least half the high school graduation requirements (generally high school juniors and seniors).

To apply for the dual credit program, students must complete the UI "Application and Registration for High School Dual Credit" form, available from the Office of Dual Credit (208-885-6237) or online at http://dualcredit.uidaho.edu/students/. The completed application must be signed by the student's parent/guardian and high school principal or counselor. Students under age 16 must also obtain permission from the course instructor. Written notice of acceptance to the dual credit program and confirmation of registration will be provided to the student. Dual credit students are not eligible for federal or state financial aid programs.

Non-degree Admission Requirements

This category is for applicants who wish to enroll in courses pertaining to their personal interest and who do not want to work toward a formal degree at the University of Idaho. Application forms are available on-line at www.uidaho.edu/admissions.

A person admitted as a non-degree student who wants to take undergraduate courses must

1. be a high school graduate or have completed the GED;
2. understand that acceptance in this category does not constitute acceptance to a degree-granting program;
3. have sufficient educational background to qualify for the course or courses in which enrollment is sought;
4. accept personal responsibility for the applicability of credits earned while registered in this category; and
5. understand that students in this non-degree category cannot be considered for federal or state financial aid.

A student who has not yet graduated from high school or obtained a GED may be admitted as a non-degree student based on the dual credit policies of the University of Idaho (see Dual Credit).

A person admitted as a non-degree student who wants to take graduate-level courses must have an undergraduate degree from an accredited institution with a GPA of 3.00 or higher. Strict limitations exist for use of non-degree credits toward a graduate degree. Please refer to the College of Graduate Studies (p. 232) section.

Applicants whose native language is not English must provide proof of English proficiency.

A non-degree student may register for no more than 7 credits each semester and may complete a maximum of 32 semester credits. Students on official UI exchange programs and those in the dual credit program are not limited to 7 credits each semester. International exchange students must take 12 or more credits. Upon completion of 32 semester credits, the student must either be admitted as a degree-seeking student at the University of Idaho or submit a letter of appeal to continue as a non-degree student. Permission of the instructor is required to enroll in courses numbered 500-600. Permission of the dean of the College of Law is required to enroll in courses numbered 800-999.

A non-degree student seeking admission as an undergraduate student or as a graduate student will remain classified as a non-degree student and will not be admitted to a program until all admission requirements have been met. Total credits and the UI GPA will be considered when applying for admission. Credit earned as a non-degree student will be moved to the undergraduate transcript upon admission as an undergraduate student unless the student specifically requests in writing to the Registrar's Office that all credits earned remain on the non-degree transcript.

Any deviations to the admission policy or credit limits will be acted on by the Director of Admissions and/or the Admissions Committee if the student wishes to enroll for undergraduate credit. Any deviations to the admission policy or credit limits will be acted on by the associate dean of the College of Graduate Studies and director of graduate admissions and/or the Graduate Petitions Committee if the student wishes to enroll for graduate credit.

International Admission Requirements

The University of Idaho encourages the application of qualified students from other nations to join its student community. Admission is dependent upon credentials which demonstrate a capacity to succeed academically at the university level. Application forms are available on-line at www.uidaho.edu/admissions.

In some instances, individual departmental requirements may be more rigorous than the general UI admission requirements. In those situations, final admission is based on the department's decision.

All international students who hold nonresident alien visas and who are pursuing a degree (i.e., matriculated) must hold a valid visa status which allows them to study full-time. Some of these visa categories include but are not limited to F-1, J-1, or H-4. The immigration status of international students must comply with the Department of Homeland Security (DHS) regulations. Individuals holding a U.S. tourist visa (VWP, B1, B2) cannot engage in a course of study in the U.S.

Deadlines for international applicants are as follows:

Deadline	Application
May 1	If applying for fall semester
October 1	If applying for spring semester
March 1	If applying for summer term
Application Fee	$70.00 (non-refundable)

International student applicants must submit:

1. Official transcripts or certified copies of certificate(s), diploma(s), or government examination report(s) received from any educational institution (high school, college, or university). These documents must be translated into English and must be sent by the certifying agency directly to the Undergraduate Admissions Office. Please note: If you are applying after the above deadlines, a professional credential evaluation of your academic transcript(s) is required. Please contact the Admissions Office or visit our website at www.uidaho.edu/admissions for a list of approved credential evaluation agencies.
2. Proof of English language proficiency. UI requires all applicants whose primary language is not English to demonstrate proficiency in the English language. Because most applicants report the test of English as a Foreign Language (TOEFL) score, UI bases its minimum English language proficiency requirements on the TOEFL. UI requires a minimum TOEFL score of 525 (paper test), or 70 (internet test). Equivalent measures of proficiency acceptable to UI include: SAT critical reading with a minimum score of 500; Cambridge International English Language Testing System (IELTS) with a minimum score of 6.0; Cambridge Certificate in Advanced English (CAE) with a pass; Cambridge Certificate of Proficiency in English (CPE) with a pass; Cambridge International "O" Levels with a pass; Michigan English Language Assessment Battery (MELAB) with a minimum score of 74. Exceptions to the minimum TOEFL requirement are made for
   a. those from official English-speaking countries
   b. those who have earned a degree from either a U.S. institution or an institution in another official English-speaking country
   c. those who successfully complete the American Language and Culture Program at the University of Idaho or
   d. based on the judgment of the Undergraduate Admissions Office, those who have successfully completed English courses at U.S. institutions. If required, the TOEFL score or an approved equivalent must be on file before the application for admission will be processed. UI does not accept scores that are more than two years old. Applicants wishing to take the MELAB on campus should contact the Counseling and Testing Center.
3. A completed "Certificate of Financial Responsibility" and all required supporting documentation as required by the Department of Homeland Security (DHS). International students must present to the Undergraduate Admissions Office satisfactory statements of finances and adequate proof of financial responsibility or sponsorship for all financial obligations while attending the university.
4. If the student is transferring to the University of Idaho from another U.S. college or university, the student must request that their SEVIS record be transferred to the University of Idaho before an I-20 or DS-2019 can be issued.

Undergraduate applicants who have had no previous work at the post-secondary level must have at least a 2.50 grade-point average (on a 4.0 scale) from secondary school and must also meet the criteria for being admitted to a university level institution in the applicant's home country in order to be considered for admission to the University of Idaho.

Undergraduate applicants who have attended a post-secondary-level institution must have completed at least 14 transferable semester credits at an accredited/recognized institution and must present a minimum grade-point average of 2.00 for all post-secondary work attempted. For admission into the College of Engineering, transfer students must have a cumulative grade-point average of at least 2.80.

Other departments have additional requirements.

Students who have completed fewer than 14 transferable semester credits (post-secondary) must meet the secondary school GPA requirements in addition to the post-secondary transfer requirements.

Applicants who do not meet the minimum university admission requirements may apply to the Admissions Committee. Those applicants must submit an application for admission, the appropriate fee, all required official transcripts and official translations, test scores, three signed letters of recommendation, and a signed written statement of their educational objectives. All materials supporting the applicant's appeal must be submitted in English. This information should be received in the Undergraduate Admissions Office by *May 1* in order to be considered for the fall semester and *October 1* for the spring semester.

International Application Deadlines

To provide time for evaluation, for notice of admission status to reach the applicant, and for DHS requirements to be met for issuance of a

student visa, applications and credentials should be received by the Undergraduate Admissions Office no later than the following dates: May 1 for the fall semester, October 1 for the spring semester, and March 1 for the summer session. Please note: If you are applying after the above deadlines, a professional credential evaluation of your academic transcript(s) is required. Please contact the admissions office or visit our website at www.uidaho.edu/admissions for a list of approved credential evaluation agencies.

International Conditional Admission

Conditional admission may be granted to applicants who qualify academically, but have not yet achieved UI's minimum English language proficiency requirement. Students granted conditional admission must enroll in UI's American Language and Culture Program (ALCP) to achieve the University's English language requirement. If the required level of language proficiency is not achieved within a two-year time period, applicants may petition to continue in the ALCP, and will need to submit a new application for admission to the academic department. Those who are granted conditional admission may qualify for concurrent enrollment.

International Student Concurrent Enrollment

Students admitted under conditional status and students enrolled in ALCP Level 5 or Level 6 may, in consultation with the coordinator of ALCP (to determine appropriate courses) and the course instructor, obtain approval to enroll as non-degree students for up to seven credits per semester of academic courses in addition to their ALCP courses. Students whose proficiency levels later prove inadequate for success in the academic courses may be withdrawn at the discretion of the academic course instructor and the ALCP coordinator. Once students achieve the necessary language qualification and pursue full admission to the university, they may apply credits of academic courses completed while in conditional status toward UI degree programs (other university restrictions may apply).

International Student Health and Accident Insurance

Supplemental health and accident insurance is mandatory for international students who hold nonresident alien visas and all accompanying dependents. Students must purchase and maintain the UI Student Health Insurance policy (SHIP) or document coverage of an equivalent policy with the International Programs Office before classes begin. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See information on insurance (p. 77) in the Student Services section.

Status

In order to pursue a degree, international students must be authorized in their current visa status. Immigration regulations require that international students holding F-1 (non-sponsored student) or J-1 (exchange visitor, student classification) visas be certified as full-time students during the academic year. Graduate students are thus required to take a minimum of nine credit hours. For all other visa holders, contact the International Programs Office for rules governing taking courses while in the U.S.

International Student Advisors

The international student advisors (ISAs) are involved with an international student's progress at every stage of the educational process. Once a student has been admitted, the ISA's provide general information about cultural adjustment and the educational system, as well as specific details regarding immigration regulations. Interested students may be paired with local host families for cultural activities through the university's International Friendship Association. All matters pertaining to a student's non-immigrant status are handled through the International Programs Office. A mandatory orientation before registration provides new students with assistance on initial questions. After this orientation, students are invited to visit the ISA's at any time with questions or concerns relating to immigration matters, education, finances, and cultural adjustment. The ISA's also serve as official liaisons between students and their consular offices or sponsoring agencies and the Department of Homeland Security.

International Student Fees

The University of Idaho's International Programs Office strives to provide new international students with the greatest assistance possible as they settle into their new homes in Moscow. As such, attendance at the multi-day international student orientation is required for all new students. This orientation will include a complete immigration workshop as well as offer several meals and other activities. There is a one-time cost of $65 for all new international students which will be added to their student account after they have attended this event. Any student who does not attend this orientation will be charged an additional $100 and be required to attend a late orientation session, for a total cost of $165. There will be a $50 per semester program cost to support international student programming at the university. Please note: These costs do not apply to students on UI exchange programs.

Evaluation of Transfer Credits

Upon admission to the University of Idaho and receipt of all official transcripts, college level courses completed at regionally accredited institutions are evaluated by the Registrar's Office. All credits accepted must be from regionally accredited American institutions or from non-US institutions recognized by the appropriate authorities in their respective countries. The UI degree audit details the applicability of the transfer courses to the student's program of study and general education requirements. The student's major department may further evaluate the applicability of the transfer courses to the student's selected program of study. Transfer credits are not included in the computation of a student's grade point average at the University of Idaho. Students with courses from educational sources that do not have regional accreditation may request to have the courses reviewed by the UI University Curriculum Committee for possible transfer to UI. Transfer credit from non-U.S. institutions is recorded with grades of pass or fail only. Transcripts from non-U.S. institutions must be evaluated by an academic credential service. Accepted transfer credits are recorded on the student's permanent record after he or she is officially admitted. The UI database of courses transferable from accredited colleges and universities is on the web at http://www.uidaho.edu/registrar/transfer.

Credit for Military Service

Credit may be given for military courses according to recommendations in the American Council on Education (ACE) Service Guide. Credit is not awarded for the military occupation specialties or basic training courses. Credits awarded for military service are recorded with grade of pass or fail only and will appear on UI transcripts after the student is officially admitted. Official documentation is necessary and may include official DD214 papers, official certificates showing completion of courses, and/or an official DD295 Form. Official documents should be sent to the Office of the Registrar, PO Box 444260, Moscow, ID 83844-4260. (See regulation J-5-b (p.62) for credit limitations.)

Credit Based on Test Scores

Credit is granted for specific scores on some of the following tests: ACT, SAT, COMPASS, DSST, AP (College Board Advanced Placement), CLEP (College Level Examination Program), IB (International Baccalaureate) and General Certificate of Education Examinations (A-Level). (See regulation I (p. 90)).

General Education Requirements for Transfer Students

One of the requirements for a University of Idaho (UI) baccalaureate degree is fulfillment of the general education requirements.

Students who earn an Associate of Arts (A.A.) or Associate of Science (A.S.) degree from a regionally accredited institution will be considered as satisfying the general education requirements. Students who have completed the Intersegmental General Education Transfer Curriculum (IGETC) at a regionally-accredited California community college will be considered as satisfying the general education requirements.

Students who have completed the 36-credit general education requirements, as defined in Idaho State Board Policy III.N, without an Associate of Arts or Associate of Science Degree and transfer from a regionally accredited postsecondary institution in Idaho will not be required to complete additional general education requirements at UI.

Students who enter UI without having completed an A.A. or A.S. or are not certified as having completed the equivalent of Idaho's State Board of Education general-education core have two options for fulfilling the general-education requirement.

One option is to satisfy the requirement as outlined in regulation J-3 (p. 91) in this catalog. In this case, transfer credits are evaluated on a course-by-course basis for equivalency to courses specified in J-3, and deficiencies are made up by completing the necessary additional credits in non-duplicating courses listed in J-3.

The second option is to satisfy the general education requirements established by the Idaho State Board of Education as set forth immediately below. In this case, transfer credits are evaluated by subject matter, rather than on a course-by-course basis, and deficiencies are made up by completing the necessary additional credits in non-duplicating courses listed in J-3. Courses that are approved to satisfy a core requirement can be used to satisfy those requirements even if the course is completed prior to being approved as a core course.

Alternative General Education Requirements for Transfer Students

A minimum of 36 credits is required from the following categories. Additional courses may be completed in any of the below categories to complete the required 36 credits.

1. **Written Communication:** 3-6 credits (Depending on initial placement)
2. **Oral Communication:** 2 credits
3. **Mathematical Ways of Knowing:** 3 credits
4. **Scientific Ways of Knowing:** 7 credits (From two different disciplines with at least one laboratory or field experience)
5. **Humanistic and Artistic Ways of Knowing:** 6 credits (From two different disciplines)
6. **Social and Behavioral Ways of Knowing:** 6 credits (From two different disciplines)

Graduate Admission to the University

Graduate programs are offered through one or more of the following locations: Moscow, the UI's Centers in Boise, Coeur d'Alene, or Idaho Falls, as well as Engineering Outreach or other distance learning opportunities. Please see www.uidaho.edu/admissions/graduate to determine where graduate programs are delivered.

More than 600 faculty members participate in teaching and research. In addition to the accreditation of some individual programs, the University is accredited by the Northwest Commission on Colleges and Universities.

Academic Requirements

Students who satisfy all criteria listed below will be considered for graduate admission to the University of Idaho:

1. Have a bachelor's degree from a regionally accredited U.S. college or university or recognized international institution. If the degree is not from a regionally accredited institution, the application may be reviewed by the department and by the College of Graduate Studies.
   Or
   Have completed three years of undergraduate study in an international accredited institution which has a Memorandum of Understanding in place with the University of Idaho for a cooperative 3+2 program leading to a graduate degree. Cooperative 3+2 programs may have higher entrance requirements. (see COGS (http://www.uidaho.edu/cogs) website for a list of 3+2 programs).
2. Have an undergraduate cumulative grade-point average of 3.00 or higher or an undergraduate grade-point average of 3.00 or higher for the last 60 semester credits (or 90 quarter credits),
3. Have maintained at least a 3.00 grade-point average in subsequent academic work if any, and
4. Have met any additional requirements set forth by the department or program which may be required. Please, review the graduate admissions website for specific departmental/program requirements at www.uidaho.edu/admissions/graduate.
5. Have been reviewed and recommended for acceptance by the academic unit administering the program in which the student seeks to enroll. For individual academic unit admission requirements, please refer to individual department sections of this catalog or consult the Graduate Admissions website at www.uidaho.edu/admissions/graduate.

The College of Graduate Studies requires all applicants to provide three letters of recommendation, a one to two-page Statement of Career Objectives, a one to two-page resume/curriculum vitae, and academic records of all colleges/universities attended.

Students planning to apply for work leading to a graduate degree should contact the academic unit in which they wish to major **before** applying for graduate admission. All admission recommendations are made at the academic until level with final admission decision made by the College of Graduate Studies. Admission is granted **only** to a specific degree and program and initial admission is granted for a specific semester.

English Language Proficiency

UI requires all applicants whose primary language is not English to demonstrate proficiency in the English language. Because most applicants report the Test of English as a Foreign Language (TOEFL) score, UI bases its minimum English language proficiency requirements

on the TOEFL. UI College of Graduate Studies requires a minimum TOEFL score of 79. UI does not accept scores that are more than two years old. Official scores must be sent directly from the test administering agency.

Equivalent measures of proficiency acceptable to UI include the MELAB (77), the Cambridge IELTS (6.5), and the PTE Academic (58). It is important to verify the departmental TOEFL score requirement as many departments require a score higher than indicated above. Exceptions to the minimum TOEFL requirement are made for

1. those from official English-speaking countries,
2. those who have earned a bachelor degree or higher from another U.S. institution, or
3. have completed ALCP level 6.

Admission application files will be sent to the academic unit for review once all required documents have been received by the Graduate Admissions Office and the application fee has been paid.

Priority Deadlines and Application Fees

Domestic Applicants	International Applicants
Fall-February 1	Fall-February 1
Spring-September 1	Spring-September 1
Summer-February 1	Summer-February 1
Non-refundable application fee $60	Non-refundable application fee $70

By meeting the priority deadline, the student will receive full consideration for College of Graduate Studies tuition waivers. Individual academic units may have earlier admission deadlines especially for applicants seeking financial assistance or assistantships.

The academic unit will determine which terms they will admit students. Check the Graduate Admission Department Requirements website for applicable admission terms (www.uidaho.edu/admissions/graduate/graduate-programs).

Applications received after the above deadlines but before the official start of the semester for which the applicant is seeking entry will be accepted only if additional students can be accommodated.

Please consult the graduate admissions website at www.uidaho.edu/admissions/graduate for more information regarding academic departments' requirements and deadlines.

The Graduate Admissions Office is not authorized to release application information to anyone other than the applicant without written authorization. Please submit a Student Consent for Release Form (http://www.uidaho.edu/registrar/forms) (available on the admissions website) if you want someone specific to be given information regarding your admission status.

Deadline for International Application for Admission

To provide time for evaluation, for notice of admission status to reach the applicant, and for United States Immigration and Customs Enforcement (USICE) requirements to be met for issuance of a student visa, applications and credential should be received by the Graduate Admissions Office no later than the following dates: for Fall semester, May 1; for Spring semester, October 1; for summer session, March 15.

Graduate Record Examination

The Graduate Record Examination (GRE) is not a College of Graduate Studies requirement but is required by some academic units. Official GRE results must come from the Educational Testing Service. In rare cases, if the examination is beyond 5 years old, the Director of Graduate Studies (DGS) may allow students to provide unofficial results of the examination with their admission application to facilitate evaluation and acceptance.

Transcripts and Application for Graduate Admission

Students wishing to enter the College of Graduate Studies must submit a University of Idaho application for admission, three letters of recommendation from professional/academic references, a statement of career objectives, a vitae/resume, and have official transcripts delivered to the Graduate Admissions Office. Transcripts become the property of the university and cannot be copied, returned, or forwarded.

A copy of the official transcript (and English translation for all foreign language documents) for every college and university that the applicant attended is acceptable for the application review process. Applicants may upload copies of official transcripts and translations via the online application. Uploaded transcripts must be legible. Please scan at 600 dpi resolution minimum. Applicants who have already earned a graduate degree from a regionally accredited U.S. institution and are seeking a graduate degree at Idaho will need to submit official transcripts from the graduate degree granting institution and unofficial copies of previous undergraduate work. All transcripts sent to the Graduate Admissions Office as part of the application process become part of the official Graduate Admissions application file and cannot be returned.

Official Academic Credentials

Transcripts, mark sheets, grade reports, or examination results, along with degree certificates from all higher education institutions attended will be required to complete acceptance. Graduate admissions accepts electronic transcripts from the National Student Clearinghouse, Parchment and eSCRIPT-SAFE. When sending official transcripts from schools located in non-English-speaking countries, each institution must submit both the English translation plus an original language record. Academic Credentials should be sent Express Mail through (FedEx, UPS, or DHL) to the following address: University of Idaho Graduate Admissions Office, 820 Idaho Ave. Morrill Hall 205 Moscow, ID 83844-3019. Transcripts sent through U.S. Mail should be sent to University of Idaho Graduate Admissions Office, 875 Perimeter Drive MS3019, Moscow Idaho, 83844-3019. Transcripts not sent directly from an institution or are hand delivered in a sealed envelope, stamped and or signed by the appropriate authority may be considered official upon evaluation. If transcripts are deemed unofficial, then official transcripts must be received before registration opens for subsequent terms or a registration hold will be placed on the students' registration. Any discrepancies later found between the student-provided /uploaded transcripts and official transcripts will be grounds for immediate dismissal. The College of Graduate Studies reserves the right to request a third-party, course-by-course, evaluation of transcripts at any time. The cost of the evaluation will be the responsibility of the student.

Acceptance to the College of Graduate Studies

When admitted to the College of Graduate Studies, a graduate applicant will be issued a letter of acceptance. Acceptance is granted for a

specified term. If an applicant does not register for the term admitted but wishes to enroll in a future term, the applicant may request a deferment.

Graduate Admission Categories

Regular Enrollment

Regular enrollment for graduate study leading toward an advanced degree may be granted to a student who satisfies all of the following criteria:

1. has a bachelor's degree from a college or university accredited by a regionally accrediting association,
2. has an undergraduate cumulative grade-point average of 3.00 or higher or an undergraduate grade-point average of 3.00 or higher for the last 60 semester credits (or 90 quarter credits),
3. has maintained at least a 3.00 grade-point average in subsequent academic work if any, and
4. has been reviewed and recommended for acceptance by the department administering the program in which the student seeks to enroll.

Students who are part of a recognized 3+2 program will be considered to be regularly admitted when they have met the specific admission requirements of COGS and any enhanced requirements outlined by the department which is offering the 3+2 program.

Provisional Enrollment

A student who is not eligible for regular enrollment may be considered for provisional enrollment (on the master's level only) if approved by the DGS and at least two of the following conditions are met:

1. the student's undergraduate GPA shows steady improvement

2. the student has taken post-baccalaureate undergraduate level course work with A and/or B grades

3. the student has achieved the 75th percentile on the relevant GRE or equivalent exam

4. the student has been out of school for five or more years and has been working for at least one year in the field of the proposed graduate major.

The academic unit specifies provisions that the student must fulfill to be advanced to regular enrollment at the time of his or her acceptance and should not be changed. Provisional enrollment is not available to International students who hold nonresident alien visas and students who are to be appointed to assistantships.

A student may not remain in provisional enrollment status for more than 1 Academic year, or after the completion of 9 credits.

1. A student will be advanced from provisional to regular enrollment provided he or she maintains a GPA of at least 3.00 each semester, (a higher GPA may be specified), fulfills the conditions that were specified at the time of initial enrollment, and receives no incompletes.

2. A student who does not meet the stated conditions for advancement cannot continue in the College of Graduate Studies or enroll in 500-level courses and is subject to normal disqualification and reinstatement procedures.

   It is the student's responsibility to be in touch with the administrative unit regarding his or her progress toward meeting the conditions for regular admission.

The conditions specified for a student's advancement to regular enrollment are established at the time of his or her acceptance and must not be changed (i.e., either strengthened or relaxed) thereafter.

Academic units need not require a student to make up ALL of his or her academic deficiencies while in provisional enrollment. Performance on a limited selection of them should suffice to demonstrate whether or not the student has the ability to do satisfactory graduate work. Remaining deficiencies, if any, can be made up after the student is in regular enrollment. The academic unit must be sure that any courses the student is required to take while in provisional enrollment will, in fact, be offered during that period.

Deferred Admission

The College of Graduate Studies will, on the recommendation of the department/program Director of Graduate Studies (DGS) allow a student to defer their admission for up to one year or for cohort programs to the start of the next admission cycle.

A previously admitted student seeking deferred admission must contact the Director of Graduate Studies (DGS) for the academic program in which they were admitted requesting in writing the deferment. The Director of Graduate Studies will communicate with department faculty and determine whether to grant the request for deferral. A departmental memo or e-mail must be submitted from the Director of Graduate Studies to the Director of Graduate Admissions, requesting the deferment. After the College of Graduate Studies approves the request, the student will be notified.

To defer admission to the new term, the student must complete the deferred admission application, which is available through the on-line application system. A link to the application will be provided to the student once the deferral has been approved. The student will be charged a $30 deferment processing fee.

Note: Additional documents may be required to process the deferred admission application.

Conditional Admission

Conditional admission may be granted to applicants who qualify academically but who have not yet met universities' minimum English language proficiency requirement. Conditional admission status is good for two years. Students may enroll in UI's American Language and Culture Program (ALCP) to achieve the academic units' English language requirement. Students must meet the units' English Language proficiency requirement prior to being granted full admission and advancing into their degree program. Please note that not all academic units grant conditional admission. International students in a 3+2 program are not eligible for conditional admission.

Concurrent Enrollment as an Option of Conditional Admission

Students enrolled in ALCP Level 5 or Level 6 may, in consultation with the coordinator of ALCP and the course instructor, obtain approval to enroll as nondegree students for up to 7 credits per semester of academic courses in addition to their fulltime ALCP courses. Students whose proficiency levels later prove inadequate for success in the academic courses may be withdrawn at the discretion of the academic

course instructor and the ALCP coordinator. Once students achieve the necessary language qualification and gain full admission to the university, they may apply the credits of academic courses completed while in conditional admission status toward UI degree programs (other university and College of Graduate Studies restrictions may apply).

Unclassified Enrollment

Unclassified enrollment is for students who do not wish to work for a graduate degree and is not to be used as a probationary category. Admission as an unclassified student does not guarantee subsequent transfer to a degree program. This enrollment category is not open to international students who hold nonresident alien visas or to students who are to be appointed to assistantships. Students on Unclassified enrollment are not eligible for Title IV financial aid.

Non-degree Student

Refer to the "Non-Degree Admission Requirements" section above for a full description of this classification. Non-degree students are not admitted to the College of Graduate Studies. They may, however, take graduate courses with permission of the instructor and the Dean of the College of Graduate Studies if they have earned a baccalaureate degree from a regionally accredited institution with an overall 3.00 GPA. Non-degree students are not eligible for Title IV financial aid. If a non-degree student receives a grade of C, D, or F in a 500-level course, he/she loses the privilege of taking more 500-level courses.

Application Requirements for Graduate Academic Certificates

Applicants must complete the online application for a Graduate Level Academic certificate ($30.00 application fee) and provide evidence of a completed bachelor's degree from a regionally accredited institution (unofficial transcripts will be accepted for graduate certificate applications) in a generally related area with an overall GPA of at least 3.0. Students who have below a 3.0 cumulative GPA on their undergraduate record and wish to enroll in a graduate certificate program are encouraged to apply and may be admitted based on departmental review. Certificate only students will be classified as certificate seeking at the graduate level and are not eligible for financial aid. International graduate certificate applicants must meet the University of Idaho language requirement. Due to the nature of this program, immigration regulations prohibit students requiring an F-1 or J-1 visa admission to this program. Current graduate degree seeking University of Idaho Students will be required to fill out a Change of Curriculum form adding the graduate certificate as an additional curriculum. Students should obtain the proper signatures from the department and return to the Office of the Registrar for processing. Current Undergraduate students wishing to earn a Graduate Academic Certificate must be eligible to participate in graduate level courses (minimum requirements — senior standing and a 3.0 UI overall GPA). If the course is not being used for the undergraduate degree the student should file a Course Reservation Request form to reserve the course for the GR transcript (maximum of 12 credits may be reserved for the graduate transcript). Once the student earns their bachelor's degree they may apply as a graduate certificate seeking student and complete the certificate program.

Concurrent or Multiple Level Curricula for Graduate Students

A graduate student may simultaneously enroll in an undergraduate, graduate or law program. The "Credit Reservation Form" indicating course use (graduate, undergraduate or law) is available and must be filed each semester or session. Please note that students seeking a degree at more than one level will need to officially apply for admission at the appropriate level. Placing courses from the undergraduate level to the graduate level or graduate level to the undergraduate level, when no degree is sought, does not require admission to the level where the course will be placed. Student fees for the courses are determined by the student's primary level; however, an undergraduate may be charged graduate fees for any courses placed on the graduate transcript.

Seniors in 500-Level Courses

A senior who has a cumulative grade-point average of 3.00 or higher may enroll in 500-level courses. The course(s) may be placed on either the undergraduate or the graduate transcript but will automatically be placed on the undergraduate transcript unless the student completes a "Credit Reservation Form" form indicating the appropriate transcript placement for the course. The placing of courses on a graduate transcript does not admit or guarantee subsequent admission of such students to the Graduate College. The student must submit the "Credit Reservation Form" to the College of Graduate Studies Office before the last day of the semester in which the Bachelor's Degree is earned. Once a student graduates with their undergraduate degree, courses will not be moved to a graduate level transcript. Students may be assessed graduate fees for courses placed on a graduate transcript.

Returning Students

University of Idaho graduate students who have been absent for two or more years or who has completed one degree and wish to enroll in further courses must file an Application for Re-admission. Re-admission must be approved by the department in whose degree program returning graduate students wishes to enroll.

A Returning Graduate Student wishing to return to the same degree/major:

Graduate Admissions will begin the approval process upon receipt of the online Application for Re-admission (see B-1). The application must be completed for the program you were previously enrolled.

A Returning Graduate Student wishing to change to different degree/major:

Students who wish admission in a new degree/major option or want to change to different program must submit a Change of Curriculum form to College of Graduate Studies with all the appropriate departmental approvals. Returning students changing programs must complete an online Application for Re-admission (indicating the new degree or program) with Graduate Admissions in addition to the Change of Curriculum form.

Additional Information for International Students

The College of Graduate Studies welcomes applications from qualified students from other countries. International applicants are expected to have qualifications equivalent to those required of other graduate students.

Prospective international students must have the equivalent of a U.S. Bachelor's Degree from a recognized institution. Usually this is a minimum of four years of study beyond grade 12 or equivalent. The college or university must be recognized as a degree granting higher education institution by the Ministry of Education or its equivalent in the home country.

If the applicant has completed his or her baccalaureate degree in a country that is a signatory of the Bologna Declaration, then: A Bologna compliant baccalaureate degree at a recognized college or university of at least three years duration, may be acceptable if recommended by the academic program.

For other three-year Bachelor's Degree holders: Not all three-year degrees are equivalent to a U.S. Bachelor Degree. A non-Bologna compliant baccalaureate degree of at least three years duration from a recognized university, may be acceptable if recommended by the academic program and if approved by College of Graduate Studies.

Please, visit the graduate admissions website prior to application to determine if your degree is acceptable and/or equivalent of a U.S. Bachelor's Degree.

Copy of Passport or National Identity Card

The applicant should submit a clear and readable copy of their passport, and if currently in the U.S., a copy of the applicant's visa.

Financial Verification

The U.S. Citizenship and Immigration Services regulations require that every student verify the availability of funds to pay for educational and living expenses before an I-20 or DS-2019 form to obtain a visa to enter the U.S. can be issued. Applicants may submit application materials without financial verification. However, if the department is recommending admission into the graduate program, the student will be required to provide, regardless of the source of funding, a completed "Certificate of Financial Responsibility" and all supporting documentation before an I-20 or DS-2019 will be issued.

Please, see www.uidaho.edu/admissions/graduate/graduate-admissions-forms for financial responsibility forms.

Enrollment Requirements

In order to pursue a degree, international students must be authorized in their current visa status. Immigration regulations require that international students holding F-1 or J-1 student visas be certified as full-time students during the academic year. F-1 graduate students are required to be enrolled in 9 credit hours and are allowed to take up to 3 credits of on-line coursework towards this requirement. J-1 visa holders are also required to enroll in 9 credit hours, but are not allowed to take online classes toward the 9-credit requirement. Other visa categories may be eligible to study in the U.S. Students who do not hold an F-1 or J-1 student status should contact the International Programs Office for rules governing enrollment while in the U.S.

Health and Accident Insurance

Supplemental health and accident insurance is mandatory for international students who hold nonresident alien visas and all accompanying dependents. Students must purchase and maintain the UI health insurance (SHIP) policy or document coverage of an equivalent policy with the International Programs Office before they are allowed to register or attend classes. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See information on (p. 77)insurance (p. 77) in the Student Services section.

International Student Advisors

The international student advisors (ISAs) are involved with an international student's progress at every stage of the educational process. Once a student has been admitted, the ISA's provide general information about cultural adjustment and the educational system, as well as specific details regarding immigration regulations. Interested students may be paired with local host families for cultural activities through the university's International Friendship Association. All matters pertaining to a student's non-immigrant status are handled through the International Programs Office. A mandatory orientation before registration provides new students with assistance on initial questions. After this orientation, students are invited to visit the ISA's at any time with questions or concerns relating to immigration matters, education, finances, and cultural adjustment. The ISA's also serve as official liaisons between students and their consular offices or sponsoring agencies and the Department of Homeland Security.

International Student Fees

The University of Idaho's International Programs Office strives to provide new international students with the greatest assistance possible as they settle into their new homes in Moscow. As such, attendance at the multi-day international student orientation is required for all new students. This orientation will include a complete immigration workshop as well as offer several meals and other activities. There is a one-time cost of $65 for all new international students which will be added to their student account after they have attended this event. Any student who does not attend this orientation will be charged an additional $100 and be required to attend a late orientation session, for a total cost of $165. There will be a $50 per semester program cost to support international student programming at the university. Please note: These costs do not apply to students on UI exchange programs.

International Graduate Ambassador Program

The International Ambassador Program assists prospective international graduate students in learning about the University of Idaho community and culture by connecting them with current international graduate students from their home country. Ambassadors may also serve as a liaison between graduate programs and prospective international students by aiding the communication process associated with recruiting international students. The International Graduate Ambassador Program is housed within the College of Graduate Studies under the direction of the Graduate Recruitment Coordinator. Please, email uigradstudies@uidaho.edu for additional information on the International Graduate Ambassador Program.

ACADEMICS & ADVISING

- Academic Advising Center (p.)
- Center for Disability Access and Resources (p.)
- Counseling and Testing Center (p.)
- Dean of Students (p.)
- Multicultural Affairs (p.)
- National Student Exchange (p.)
- Polya Mathematics Center (p.)
- Pre-health Professions Advising (p.)
- Raven Scholars Program (p.)
- Statistics Assistance Center (p.)
- Student-Athlete Support Services (p.)
- Student Support Services - A TRIO Program (p.)
- Tutoring and College Success (p.)
- Veterans' Benefits for Educational Assistance (p.)
- Women's Center (p.)
- Writing Center (p.)

Academic advising is one of the cornerstones to a successful student experience at the University of Idaho. Whether you are a faculty or staff member looking for guidance on how to advise your students, or you are a student looking for academic advising on everything from choosing a major to career goals, our staff in academic advising can help. At the University of Idaho, academic advising is performed at the department- or college-level. Students are assigned an advisor by the college or department for the major(s) a student has declared.

Academic Advising Center

Vandal Success Center, Idaho Commons 306;
208-885-6300; advising@uidaho.edu.

The Advising Services program serves as a clearinghouse for academic advising information and is a point of contact where new and continuing students receive help in finding their way to the appropriate college and department advisors. Advising Services is also a center for delivery of development programs on academic advising for faculty and staff advisors. Advising Services staff can assist students considering a change of major and consult with advisors and students who have questions regarding general education requirements.

Center for Disability Access and Resources

Bruce M. Pitman Center 127;
208-885-6307; cdar@uidaho.edu; www.uidaho.edu/current-students/cdar

The University of Idaho has established services for students with disabilities in accordance with Section 504 of the Rehabilitation Act of 1973, as amended, and with the Americans with Disabilities Act (ADA) of 1990, as amended.

The Mission of Center for Disability Access and Resources (CDAR) is to provide equal and integrated access to students with permanent or temporary disabilities. Students requesting accommodations or services must provide CDAR with appropriate disability documentation to support their request. In order to receive services in a timely manner, students are advised to make requests with adequate advance notice. Services include, but are not limited to: Deaf services, alternative text, notetaking, testing accommodations, assistive technology, transition management, housing accommodations, campus accessibility information, scholarship opportunities, advocacy, and assistance with learning as it relates to disabilities.

Students are asked to contact CDAR as soon as possible to discuss specific disability-related concerns and needs. This voluntary self-identification enables CDAR to determine appropriate and reasonable accommodations to ensure classes, programs, services and activities at the University of Idaho are accessible. Information regarding disabilities will be kept in strict confidence and has no effect on admission to the University. Federal law prohibits the Admissions Office from making preadmissions inquiries about disabilities.

Counseling and Testing Center

Continuing Education Building, 3rd Floor; 208-885-6716; www.ctc.uidaho.edu

Many students find that it is helpful to discuss their concerns with a professional who takes the time to listen and understand. Counselors at the Counseling & Testing Center (CTC) are available to meet with students to discuss personal, educational, or career concerns. Counseling can help students learn more about themselves and develop new skills to deal more effectively with personal problems such as depression, anxiety, stress, eating disorders, sexual abuse, relationships, academic pressures, and problems with alcohol or other substances. Counseling sessions are confidential. The CTC offers the following services: crisis intervention, individual counseling, group counseling, couples counseling, stress management, biofeedback training, educational presentations, referral, testing, and assessment of learning disabilities. For students who wish to research issues on their own or in conjunction with a counselor, the CTC has a self-help room with information to assist students with solutions to problems such as test anxiety, panic, depression, homesickness, relationship concerns, and a variety of other issues common to college students.

The CTC also offers the following career development and counseling services to help students select a major and a career direction that is right for them:

1. individual counseling for major and career decision making,
2. career interest testing and interpretation, and
3. computerized career exploration system (DISCOVER©).

The CTC offers a variety of testing and assessment services. These include placement tests such as COMPASS which is used to determine initial placement in math and English courses, and advanced placement exams such as CLEP which allow students to earn college credit by passing exams in a variety of subject areas. The CTC also administers many of the national testing programs such as the SAT, ACT, GRE, TOEFL, MELAB, MCAT and PRAXIS and provides a secure testing environment for students who need exams proctored. Assessment services include evaluations for learning disabilities and Attention Deficit/Hyperactivity Disorder. In addition, psychological, diagnostic and career assessments are often used in the context of counseling and are available at the CTC. A fee is charged for most testing and assessment services. For more detailed information go to www.uidaho.edu/CTC/testing.

Counseling services are available without charge to full-time students. A fee is charged for most assessment and proctoring services. The CTC is committed to offering services that are inclusive and respectful of all students, regardless of race and/or ethnicity, sex, color, religion, spirituality, creed, national origin or ancestry, age, marital status, sexual

orientation, gender identity, gender expression, disability, or veteran status. For additional information on services provided by the Counseling & Testing Center, visit the web at www.ctc.uidaho.edu.

Dean of Students

TLC 232; 208-885-6757; askjoe@uidaho.edu; www.uidaho.edu/dos

The University of Idaho is comprised of a diverse student population that requires the UI to have a diverse student services program. The Dean of Students Office provides a variety of services that focus on assisting students. Programs and services include advising students in living groups, as well as those off campus, ethnic minority students, and veterans. In addition, the Dean of Students Office coordinates New Student Orientation, Women's Center, Child Care Center, National Student Exchange Program, student leadership activities, fraternity/sorority programs, and student discipline/conduct activities.

This wide range of programs and services includes assisting families and students who may experience crisis situations that disrupt normal academic activities.

Staff members are trained to work with individuals and groups of students, or serve as a liaison between students, departments, and agencies on and off campus.

All of the services and programs are supportive of the academic mission of UI and are an integral part of the student's total education at the university. Services offered by the Dean of Students Office are highlighted below.

Multicultural Affairs

Office of Multicultural Affairs; TLC. 230; 208-885-7716; fax: 208-885-9494; oma@uidaho.edu; www.uidaho.edu/oma

UI is committed to establishing and maintaining a campus environment that promotes cultural diversity. This is accomplished through the provision of student services that begin to address specific needs of Asian-American/Pacific Islander, Black or African-American, Chicano/Latino, and Native-American students. While offering targeted services and programs to these populations, OMA is fundamentally a campus wide resource meant to benefit the educational experience of the entire campus community by leading in the creation of an environment that supports multiculturalism and promotes inclusion.

The Office of Multicultural Affairs (OMA) provides assistance to these traditionally underrepresented students in the areas of advocacy, financial aid, and accessing university student support programs. OMA is staffed by a full time director, a program coordinator and an administrative assistant. Staff members are involved in campus wide leadership and state wide organizations to promote diversity. One important resource of these efforts is a group of student mentors selected to help new multicultural students connect with resources and learn from the experiences of more experienced U of I students. This mentor group is called P.A.C.E. (Peer Advising on the College Experience). OMA continuously works with other departments across the university to resolve issues that may hinder recruitment, retention or the success of multicultural students.

Multicultural student organizations serve a vital role in retention and helping to promote and support cultural diversity on the UI campus. Some of the organizations that are currently active are the Asian American/Pacific Islander Association (AAPIA), the Native American Student Association (NASA), The Native-American Graduate Student Association, Gamma Alpha Omega Sorority Inc., Iota Psi Phi Sorority Inc., Lambda Theta Alpha Sorority Inc,, the Interested Ladies of Lambda Theta Alpha, the University of Idaho's Black Student Union (UI-BSU), Organizacion de Estudiantes Latino Americanos (OELA), MEChA (Movimiento Estudiantil Chicanos de Aztlán), the Hispanic Business Association, Sigma Lambda Beta Fraternity Inc., GSA (the Gay Straight Alliance), WOCA (Women of Color Alliance), the Men of Vision, the Hispanic Business Association (HBA), Sabor de la Raza, CAMPOS (the College Assistance Migrant Program Organization of Students), ALI (the Association of Latin-Americans and Iberians), ASA (African Students Association), the Associated Students of African Descent, and UNITY. OMA assists these and other organizations in planning and executing campus activities of special interest to their group's members (e.g., cultural heritage months, student leadership retreat, organizational meetings, and campus educational cultural activities). Many meetings of these student groups are held in the Multicultural Student Center, which is located in Rooms 228 and 229 of the Teaching and Learning Center (TLC). For further information contact the Office of Multicultural Affairs main office in room 230 of the Teaching and Learning Center at 208-885-7716 or e-mail oma@uidaho.edu. To visit our web page visit www.uidaho.edu/oma.

National Student Exchange

National Student Exchange (NSE) gives University of Idaho students the opportunity to attend one of 175 colleges or universities throughout the United States for one or two semesters. UI students pay UI fees or the resident fees of their host campus. Students normally need to apply by February for the next academic year. Credits earned on NSE fulfill University of Idaho residence-credit requirements.

To qualify for participation in the NSE, a student should:

1. be a full-time University of Idaho student;
2. be a sophomore, junior, or senior at the time of exchange; and
3. have a UI grade-point average of 2.5 at the time the application is filed.

Information and applications may be obtained from the International Programs Office, LLC Building #3, Ground Floor (208-885-0858).

Polya Mathematics Center

Brink/Phinney Hall, 1st floor; 208/885-5717; polya@uidaho.edu; **www.uidaho.edu/sci/math/polya/approach**

The Polya Mathematics Center is a resource for students who take mathematics courses. Polya is located on the ground floor of Brink/Phinney Hall in two large rooms. The computer room offers students mathematical software and courseware and is staffed over 80 hours each week. The study and consultation room provides space for individual and group study with readily available assistance by instructors and teaching assistants.

The pre-calculus courses MATH 108 (https://uidaho-preview.courseleaf.com/search/?P=MATH%20108), MATH 143 (https://uidaho-preview.courseleaf.com/search/?P=MATH%20143) are taught entirely in Polya. The students in these courses attend one focus group each week where they are guided by an instructor who provides the necessary structure and direction. Lectures are delivered at computers by streaming video so that students can view them at their convenience and review them as needed. Those who prefer a live lecture can attend the lecture series offered nine times a week. Students work homework

exercises on the computer. The computer-mediated exercises offer assistance and immediate detection of errors. The flexible organization of these courses offers students the option of working at a faster pace than required in order to complete the courses in less than a semester.

The Polya Math Center staff also offers drop-in assistance for students in MATH 160 (https://uidaho-preview.courseleaf.com/search/?P=MATH%20160), MATH 170 (https://uidaho-preview.courseleaf.com/search/?P=MATH%20170), MATH 175 (https://uidaho-preview.courseleaf.com/search/?P=MATH%20175), and MATH 275 (https://uidaho-preview.courseleaf.com/search/?P=MATH%20275). The hours and location for calculus assistance varies from semester to semester and are posted on the Polya web-site.

Pre-Health Professions Advising

pre-health@uidaho.edu; 208-885-5809

The Pre-Health Professions Advising Program at the University of Idaho serves as a resource for current students and alumni, from all majors, who are interested in a health professions career.

"Pre-Health" is not a specific major or academic track: it is a personal and professional development path that students pursue alongside completion of their degree requirements. Pre-health advisors assist students with prerequisite course sequencing, advice for building necessary clinical and shadowing experience, preparing to take professional school entrance exams, and guidance with the application and interview process.

Students can connect with our program by signing up for the Pre-Health Advising Contact List (this process also adds a specific pre-health cohort code to your Degree Audit, such as "pre-med" or "pre-PT"), requesting an individual advising appointment, attending workshops, and following us on Facebook.

Raven Scholars Program

Idaho Commons Room 330, www.uidaho.edu/current-students/cdar/raven-scholars

The Raven Scholars Program supports college success for students who are on the Autism Spectrum by providing peer mentoring, coordination of campus services, and opportunities to improve academic and life skills.

Statistics Assistance Center

First Floor of the University Library behind the Reference Desk; www.uidaho.edu/sci/stat/about/sac

The Statistics Assistance Center (SAC) was developed to give assistance to students taking lower level statistics courses. Statistics graduate students in the SAC provide help for students enrolled in STAT 251 (https://uidaho-preview.courseleaf.com/search/?P=STAT%20251), STAT 301 (https://uidaho-preview.courseleaf.com/search/?P=STAT%20301), and STAT 431 (https://uidaho-preview.courseleaf.com/search/?P=STAT%20431). The staff works to provide a friendly, non-threatening environment where students will feel comfortable to work, ask questions, and learn statistics outside of class.

The SAC is generally open for statistics tutoring Monday through Friday. Statistics tutoring hours vary each semester so please check with the Department of Statistical Science Office (Brink 415A; 208-885-2929) for scheduled times or see the statistics web pagewww.uidaho.edu/sci/stat/about/sac. Students can visit the SAC on a drop-in basis during scheduled times for help with homework problems. There is a Student Computing Lab that has a number of computers that provide supporting software for statistics courses at the Library.

Student-Athlete Support Services

Student-Athlete Support Services is committed to the education and success of student-athletes at the University of Idaho. SASS collaborates with cross-campus resources to support student-athletes academic progress, maintain NCAA eligibility and develop well-rounded, employable graduates. This is accomplished through nurturing study and social skill sets, encouraging initiative, self-motivation, and accountability and fostering positive, meaningful relationships within the Vandal community and beyond.

Student Support Services - a TRIO program

ssstrio@uidaho.edu

Student Support Services (SSS), an academic support program, assists 232 participating students each year to

1. identify and pursue their educational goals,
2. establish, maintain, or improve their academic performance, and
3. work through the challenges of university life.

The SSS-Trio program offers participants individualized tutoring in most subject areas, educational planning and goal setting, academic advising, and focused learning and study skill development. SSS also provides personal support. This support is particularly helpful for students with specific needs (e.g., delayed entry or re-entry, nontraditional preparation, disabilities which impact learning, academic probation and reinstatement, or provisional admission).

To be eligible for services, a student must be either a U.S. citizen or permanent legal resident, must have a need for academic services, and must be EITHER

1. low income (according to federal guidelines) OR
2. from a first generation family (neither parent/guardian has earned a baccalaureate degree) OR
3. have a documented disability which impacts learning.

SSS Merit Scholarships (between $890-$1,000) will be awarded spring semester to each active program participant with freshman or sophomore standing, who is a PELL Grant recipient with financial need, and who makes satisfactory academic progress fall semester. Students are accepted into the program on a first-come, first-served basis and are encouraged to contact the office as early in the semester as possible.

Tutoring and College Success

tcs@uidaho.edu

Tutoring and College Success (TCS) supports all undergraduate students in their educational goals through Drop-In Tutoring (tutoring for most subjects with no appointment), Supplemental Instruction (study sessions for difficult courses), and Academic Coaching (success consultations, workshops and presentations, and for-credit success strategies course).

Women's Center

The Women's Center staff is committed to providing a welcoming environment and a sense of community for all. At the Women's Center, we foster personal and professional growth through a network of support

and services including educational programming, gender equity issues, information, referrals, and outreach.

Programs and services at the Women's Center include: brown-bag lunchtime programs (presentations and discussions covering a variety of topics); library (a circulating library of over 1,500 books and journals, primarily comprised of research, information, and literature regarding gender issues; information and referral to other agencies and services); lounge (a place to relax, read, study, get acquainted with others, and exchange ideas); newsletter (a publication announcing current programs and services, and news about women's issues). The center also assists with nontraditional student services and programs. The Women's Center is located in Room 109 of Memorial Gym.

Writing Center

Idaho Commons 323; 208-855-6644; www.uidaho.edu/class/english/writingcenter

Located on the third floor of the Idaho Commons, the English department's Writing Center offers peer tutoring assistance to all UI students. Writing Center tutors assist students with analyzing writing strengths and weaknesses; developing ideas; and improving focus, organization, grammar, and punctuation. The Writing Center offers weekday, evening, and weekend hours. Students may stop by, telephone, or visit the website for further information and a current schedule.

Veterans' Benefits for Educational Assistance

The Office of Veteran Affairs assists veterans, dependents, reservists, and national guardsmen who are eligible for educational benefits through the Veterans Administration. Students expecting to receive veteran's benefits must apply for benefits and should contact the Office of Veteran Affairs at least six weeks before the beginning of each semester.

To qualify for payments, all veterans must be released under honorable conditions. To receive full benefits, a veteran must be pursuing an approved course of study leading to a degree or other professional objective. To be considered full time, undergraduate students must carry 12 credits or the equivalent, and graduate students must carry 9 credits or the equivalent (see regulation O-1 (p. 105)).

An advisory service is available to veterans and additional information, advice on benefits, or application forms may be obtained by writing to the veterans' advisor in the Office of the Dean of Students, PO Box 442431, Moscow ID 83844-2431, (208-885-7979); or online at www.uidaho.edu/dos.

ALUMNI & CAREER SERVICES

Alumni Association

Alumni Center; 208-885-6154; alumni@uidaho.edu; www.uidaho.edu/alumni

The University of Idaho Alumni Association exists to foster and coordinate the support of alumni and friends of the university in strengthening the academic, research, service, and leadership-building programs of the institution. It also provides individual alumni services to its non-dues paying members throughout the world.

All former UI students who earned a UI degree or at least 90 credits at UI, and associate and honorary alumni are members of the association. The director of alumni relations and staff, along with an elected board of directors, guide the many programs, services, and activities for the more than 75,000 members.

The Alumni Association strives to keep alumni informed about their alma mater, encourage university loyalty and material support, and apprise the university community of alumni opinion. Through a variety of awards, the association honors outstanding alumni, students, or other individuals who provide exceptional service to the institution or state of Idaho. Scholarships are given by the association to help both entering and continuing students at the university.

Alumni can maintain close ties with the university through Alumni Association services, such as travel tours, and campus, national, and worldwide gatherings for special UI occasions, including reunions and Silver and Gold Events. The association also provides and organizes support for the university through active organizations, such as the Student Alumni Relations Board and the UI Retirees Association.

Areas of recent emphasis for the association include recruiting and informing prospective students about the university, and increasing volunteer support through the development of alumni chapters and constituency groups. The association is also strengthening and expanding its membership services, through use of Internet and lifetime e-mail service.

Career Services

Idaho Commons 334; (208) 885-6121; careerservices@uidaho.edu; www.uidaho.edu/careerservices

The university is committed to providing students with a comprehensive set of career exploration and professional development services, including assistance in identifying career and major interests, developing skills and experience through academically-relevant work and experiential learning opportunities, preparing professional job/intern application materials, educating students on job search strategies, and preparing students for interviews. In addition to serving UI students and alumni, Career Services also provides assistance to academic departments and employers. Career Services provides University of Idaho students and alumni with services and resources that empower them as they make critical life decisions and pursue career success. We enhance classroom learning by facilitating career exploration, experiential learning opportunities, and access to future employers.

Career Decision-Making and Professional Development Services are available to UI students and alumni of all majors. In today's job market, well-educated job candidates with relevant work experience are highly desired. Career Advising Liaisons help students prepare for employment by providing career education through workshops, career classes, group presentations, and individual advising sessions. The Career Services office serves students at all stages of career development, from making decisions on their major and career interests, to identifying and participating in experiential learning opportunities (internships, jobs, research experiences, and service-learning courses), to applying for professional careers upon graduation. A strong emphasis is placed upon the value of experiential learning. Students are encouraged to participate in a variety of activities to apply classroom theory in a real-life setting, clarify their educational and career goals, gain practical skills and experiences, and learn more about themselves, their community, and their future professions.

In addition to career guidance provided by Career Advising Liaisons, Career Services also sponsors numerous professional events that connect students with potential employers. Some of these events include on-campus interviews, career fairs, etiquette dinners, and networking nights. These events connect students with hundreds of employers seeking candidates for their full-time, internship, and summer employment opportunities, as well as graduate and professional schools opportunities.

Career Services also promotes civic engagement and hands-on learning through the Service Learning Center. By training faculty on the service-learning pedagogy and providing support for service-learning projects, a growing number of students experience a much deeper level of learning through the participation in service projects within their courses.

ATHLETICS & EXTRACURRICULARS

- Intercollegiate Athletics (p.)
- Athletic Department Mission (p.)
- Athletic Program Goals (p.)
- Student-Athlete Support Services (p.)
- Recreational, Social, Extracurricular, and Co-curricular Activities (p.)
- Religious Activities (p.)

Intercollegiate Athletics

Athletics Department; ASUI Kibbie Dome 2302; 208-885-0200; www.GoVandals.com (http://www.govandals.com)

Idaho has a proud athletic tradition and sponsors 16 intercollegiate sports for men and women. The teams are known as the Vandals and compete as a Division I member of the NCAA and Sun Belt (football), Big Sky (men's and women's basketball, volleyball, soccer, men's and women's indoor track and field, men's and women's tennis, men's and women's golf, and men's and women's cross country) and Western Athletic (swimming and diving) conferences.

The men's program consists of teams in football, basketball, cross country, indoor and outdoor track and field, tennis, and golf. The women's program consists of teams in basketball, volleyball, cross country, indoor and outdoor track and field, tennis, golf, soccer and swimming and diving.

The athletic program enjoys splendid facilities. The Kibbie-ASUI Activity Center, known as the "Kibbie Dome," houses the Athletic Department offices, team locker rooms, weight room, athletic training facilities, and academic support unit. The Kibbie Dome itself is the site for football and men's and women's basketball games played at the Cowan Spectrum within the Kibbie Dome. Historic Memorial Gymnasium is the home for Idaho volleyball. Track and field and tennis make great use of the Kibbie Dome's indoor facilities for practice and competition as well, with the five-lane, 290-meter track and the nine indoor tennis courts. The women's soccer team plays its home matches on Guy Wicks Field. The university's 18-hole championship golf course, numerous outdoor tennis courts, and the UI Swim Center complete the facility picture.

Athletic Department Mission

The University of Idaho Department of Athletics is committed to enhancing the visibility and image of the university by:

- Developing and maintaining competitive, integrity-based athletic programs
- Uniting students, faculty, staff, alumni, and the community
- Educating and graduating student-athletes
- Competing for championships

The core values are: Tradition, pride, commitment to excellence, customer focus, accountability, integrity, diversity and gender equity.

Athletic Program Goals

The goals of the UI athletics program are:

1. Recruit and prepare student-athletes for successful competition academically, athletically, and socially. Contend for Western Athletic Conference Championships and graduate student-athletes at rates above national averages.
2. Establish a national image for the University of Idaho and engage the campus and community. Improve and expand our image through marketing and outreach activities.
3. Promote diversity and gender equity. Conduct an athletics program that incorporates, fosters, and enhances gender equity and diversity.
4. Increase Revenue from Development and Corporate Partner (Learfield) Sponsorship Opportunities. Annually increase revenue toward the average of Western Athletic Department institutions.
5. Enhance Internal and External Relationships. Strengthen our internal and external relationships through timely meetings, increased communications, and by exhibiting high standards of personal conduct at all times.
6. Attain Financial Stability. Develop a user friendly and informative budget process that ensures fiscal accountability and contributes to an athletic reserve fund.
7. Continue Improving Facilities. Complete fund raising for the Kibbie Dome and identify future priorities from feasibility study.
8. Enhance Support Services. Inventory and evaluate support services and processes for efficiency and effectiveness.
9. Recruit, Retain, Recognize and Reward Current and Former Coaches, Staff and Student Athletes. Identify and offer rewards and recognition for current and former student-athletes, coaches and staff.

Student-Athlete Support Services

Student-Athlete Support Services is committed to the education and success of student-athletes at the University of Idaho. SASS collaborates with cross-campus resources to support student-athletes academic progress, maintain NCAA eligibility and develop well-rounded, employable graduates. This is accomplished through nurturing study and social skill sets, encouraging initiative, self-motivation, and accountability and fostering positive, meaningful relationships within the Vandal community and beyond.

Recreational, Social, Extracurricular, and Co-curricular Activities

Idaho Commons; 208-885-2667 Bruce Pitman Center 208-885-4636; www.uidaho.edu/studentaffairs/idaho-commons-and-student-union

Many of the programs and activities at the Idaho Commons and Student Union are co-curricular in design, linking students' academic endeavors with out-of-class learning experiences. Students can get involved in numerous functions and activities that meet their personal goals for individual growth and leisure time activity. UI student organizations in the Idaho Commons and Student Union are integral to the planning and implementation of educational, cultural, and recreational activities for the campus.

ASUI Productions is a forum for students to organize almost all entertainment each year including blockbuster film series, small concerts, coffeehouses, "open mic" nights, comedians, educational speakers, and nationally touring bands. In the process, students gain experience with event planning and marketing. **Idaho Commons and Student Union Programs** feature weekly foreign and alternative films, noontime and summertime concerts, and educational enrichment events. A College Bowl Tournament is also sponsored by ASUI Productions. For more

information, contact the Student Activities and Leadership Programs Office in the Idaho Commons Room 302, 208-885-6331.

ASUI - Student Government is dedicated to addressing the needs of undergraduate students and the campus community at large. The Associated Students University of Idaho is an organization that represents the most important element of the university, the students. The ASUI Senate, while acting as a liaison between the undergraduate student population and university administration, plays a very active role in shaping policy. Student senators, who are elected to a two-semester term, are also given the opportunity to work with and learn more about the Idaho State Legislature and the State Board of Education. For those students who have an interest and want to shape policy in a specific area of campus life, the ASUI features many different boards: academics, activities, civic engagement, student issues, Idaho Commons and Union Facilities, ASUI productions, athletics, natural resources and conservation, and Student Recreation Center. Opportunities are also available for student appointment to university-wide committees. ASUI offices are located in the Idaho Commons in the Student Activities and Leadership Programs Office, Room 302, 208-885-6331, www.uidaho.edu/studentaffairs/department-of-student-involvement/asui.

Civic Education Project and Volunteer Programs. The national community service movement is alive and well at the University of Idaho. Our programs are dedicated to providing students with opportunities to serve the community while developing group leadership skills and a better understanding of citizenship. The program coordinates several one-day service projects with the community including 'Make a Difference Day' and 'Saturday of Service' (Youth Service Day). The program also keeps an on-going catalog of service and volunteer positions available to students and student organizations. Some University classes offer credit for service commitments, and the program assists in connecting these students to community service projects. The program promotes the belief that young people can greatly impact our communities and future through community service and by building a lifelong ethic of civic engagement. In addition, the program offers national community service based scholarship programs such as the Bonner's Service Leaders for students, and administers these programs in the community. For more information on volunteering, contact the Student Activities and Leadership Programs Office, Idaho Commons Room 302, 208-885-6331

The **Enrollment Services**, located in the newly renovated Student Union, is the headquarters for Undergraduate Admissions, Registrar, Student Accounts, and Office of Undergraduate Recruitment. Branch offices of Vandal ID Card, Parking, and Housing are located near the Information Desk. The Financial Aid office and the UI Bookstore are also nearby. Tours of the campus originate from the Office of Undergraduate Recruitment on the main floor. For information on Student Union activities and services, call 208-885-INFO or 208-885-4636.

The **Graduate Student Association** (GSA) supports and promotes graduate student education and graduate student life at the University of Idaho. This includes creating programs and assisting graduate students during their transition from student life to professional life. GSA elections are held annually as a commitment to providing a collective voice for graduate students to the university and to the state. The GSA office is located in the Idaho Commons, Room 305, just off the Overlook Lounge. GSA can be reached at 208-885-9446 or gsa@uidaho.edu.

The **Idaho Commons** is the center of campus life and provides programs, amenities, and services to enhance the educational experience of UI students, their families, and guests. Located at the heart of campus, the Idaho Commons serves as the crossroads and meeting place for the University of Idaho. Services offered at the Idaho Commons include meeting rooms for nonacademic programs, a variety of student support services, a food court, coffee shop, convenience store, copy service, credit union, ATMs, lounges, and administrative offices. Through various programs and services, the Idaho Commons cultivates and enhances the living and learning experience of students. Our students enjoy the many aspects of the building itself while gathering with friends to study, learn, and socialize with each other in a comfortable atmosphere. Cultural enrichment programs such as art exhibits, music, and speaker presentations are available to students, other members of the university community, and area residents. For information on Commons' activities, call 208-885-CMNS (2667) or 208-885-2233.

Leadership Development starts from the moment students enroll at the University of Idaho. An annual fall leadership retreat promotes student development and growth through campus involvement. Students can stay involved throughout the year through leadership training seminars, student organizations, and meetings between student leaders and university administrators. The **Group Opportunities and Leadership (GOAL)** program stretches both mind and body. Through activities such as ropes courses and team initiatives, students will develop knowledge of leadership styles, conflict resolution, communication skills, and problem solving. For more information about leadership development, contact the Student Activities and Leadership Programs Office, Idaho Commons Room 302, 208-885-6331.

Looking for an adventure experience? **Outdoor Programs** offers classes and informal instruction in some of today's top outdoor activities; kayaking, rafting, rock climbing, mountaineering, skiing, and other winter sports. Take advantage of Outdoor Programs Resource Center and Climbing Center, which includes 6000 square feet of climbing surface and a 55 foot pinnacle. Want to experience the great outdoors, but lack the gear? The **Outdoor Rental Center** has the most extensive inventory of quality outdoor equipment in the Northwest. From rafts, kayaks, and canoes to skis, climbing gear, and camping equipment, the Outdoor Rental Center is ready to serve students and the Moscow community with their outdoor needs. The Outdoor Program, the Outdoor Rental Center, and the Climbing Center are located in the Student Recreation Center (SRC). For information, call the Outdoor Program 208-885-6810, Rental Center 208-885-6170, www.uidaho.edu/studentaffairs/campus-recreation/outdoor-programs.

Recreational facilities located on the Moscow campus include the new Student Recreation Center with approximately 85,000 square feet devoted to student health and recreation. In it are a climbing wall with a 55 ft. high pinnacle (the highest of any university), fitness equipment, indoor jogging track, 2 full-size gyms, a multi-purpose court, 2 multi-purpose/aerobic rooms, locker rooms, and a social lounge. Additional recreation facilities include the ASUI Kibbie Activity Center, the Swim Center, an 18-hole golf course, and indoor and outdoor tennis and handball courts.

Sound, Production, and Lighting Services (SPL) offers training and experiential opportunities for student employees. SPL provides professional sound, lighting, and multimedia production for student-sponsored performance and entertainment events. Employment opportunities exist for technicians to work with sound, lights, and film. Other employment is also available to students interested in computer and network support. SPL is located on the 3rd floor of the Student Union, 208-885-6947.

In **Student Media**, students utilize real-world technology in the various productions of the student newspaper, yearbook, FM radio, and advertising. *Argonaut* , the twice-weekly student newspaper,

gives students the chance to gain real-world experience in media writing, computer graphics, photography, advertising, marketing, and business management. Editors, paginators, reporters, and advertising representatives have the opportunity to work with the newest technological equipment to create a product comparable to many commercial newspapers. The *Gem of the Mountains* yearbook is about much more than putting out an annual; the most important commitment of the GEM staff has been their continued dedication toward preserving the UI legacy for students and alumni. KUOI-89.3 FM, the student-run campus radio station, provides a free-form alternative to other media in the Moscow-Pullman area. Students have the opportunity to serve as on-air announcers, music and programming directors, and station manager. All student media organizations are housed on the 3rd floor of the Bruce Pitman Center, 208-885-7825.

Variety is the spice of life, and there is no better place to find your niche than with the variety of **Student Organizations** available at the University of Idaho. With more than 150 campus-wide organizations, sports clubs, and Greek chapters, students have many choices when it comes to customizing involvement. Catch a glimpse of the options available on campus by attending the Student Involvement Fair and browsing the Student Organization Guide to Involvement. Not only is it easy to find a student organization, it is just as simple to start your own. Through resources in the Student Activities Office, new organizations can gain recognition, build membership, and apply for funding from the ASUI Activities Board. For more information, contact the Student Activities and Leadership Programs Office, Idaho Commons Room 302, 208-885-6331.

The **Student Union**, located at Sixth and Deakin Streets, is home to Enrollment Services; including the Registrar's Office, Admissions, Office of Undergraduate Recruitment, Student Accounts/Cashiers, Student Financial Aid; Off-Campus Student Employment; Student Media; Sound, Production, and Lighting; International Ballroom; Borah Theater; UI Lionel Hampton Jazz Festival office; and several meeting rooms. Services offered at the Student Union include student computer labs, a video center, a cafe, catering services, copy service, ATMs, and lounges. 208-885-4636.

Religious Activities

The university is served by three campus religious centers: Campus Christian Center (corner of University and Elm); LDS Institute of Religion (902 Deakin); and St. Augustine's Roman Catholic Center (corner of Sixth and Deakin). These centers provide opportunities for the study and practice of religion as well as resources in counseling and guidance. In addition, all of Moscow's churches provide opportunities for religious development for University of Idaho students.

COMMUNITY STANDARDS AND RESOURCES

Conduct & Community Standards

To support the core values and mission of the University of Idaho, the staff within Conduct & Community Standards strives to uphold a balance student accountability with education and grown in regard to the Student Code of Conduct. If you need assistance with the Student Code of Conduct, please contact the Office of the Dean of Students at 208/885-6757.

Student Rights, Conduct, and Records

The "Statement of Student Rights," "Student Code of Conduct," and "Student Records Policy" are published in the *Faculty-Staff Handbook* and in the booklet entitled "Policies and Information of Interest to Students." The booklet is available from the Office of the Dean of Students (TLC 232), the Office of Academic Affairs (Admin 104), and other locations around the campus. Members of the university community are urged to familiarize themselves with these basic documents.

Child Care Services

UI Children's Center, 421 Sweet Ave; www.uidaho.edu/student-affairs/childrens-center

The UI Children's Center offers childcare, early schooling, and after school programs for children from 6 weeks through 8 years of age. Accredited by the National Academy of Early Childhood Programs, the UI Children's Center offers a safe and nurturing environment as well as programs which promote the physical, social, emotional, and intellectual development of young children. For more information, call 208-885-6414 or visit their website, www.students.uidaho.edu/uikids.

The Margaret Ritchie School of Family and Consumer Sciences Child Development Laboratory provides childcare opportunities for preschool children. Call 208-885-6332 for information.

Dean of Students

TLC 232; 208-885-6757; askjoe@uidaho.edu; www.uidaho.edu/dos

The University of Idaho is comprised of a diverse student population that requires the UI to have a diverse student services program. The Dean of Students Office provides a variety of services that focus on assisting students. Programs and services include advising students in living groups, as well as those off campus, ethnic minority students, and veterans. In addition, the Dean of Students Office coordinates New Student Orientation, Women's Center, Child Care Center, National Student Exchange Program, student leadership activities, fraternity/sorority programs, and student discipline/conduct activities.

This wide range of programs and services includes assisting families and students who may experience crisis situations that disrupt normal academic activities.

Staff members are trained to work with individuals and groups of students, or serve as a liaison between students, departments, and agencies on and off campus.

All of the services and programs are supportive of the academic mission of UI and are an integral part of the student's total education at the university. Services offered by the Dean of Students Office are highlighted below.

Multicultural Affairs

Office of Multicultural Affairs; TLC. 230; 208-885-7716; fax: 208-885-9494; oma@uidaho.edu; www.uidaho.edu/oma

UI is committed to establishing and maintaining a campus environment that promotes cultural diversity. This is accomplished through the provision of student services that begin to address specific needs of Asian-American/Pacific Islander, Black or African-American, Chicano/Latino, and Native-American students. While offering targeted services and programs to these populations, OMA is fundamentally a campus wide resource meant to benefit the educational experience of the entire campus community by leading in the creation of an environment that supports multiculturalism and promotes inclusion.

The Office of Multicultural Affairs (OMA) provides assistance to these traditionally underrepresented students in the areas of advocacy, financial aid, and accessing university student support programs. OMA is staffed by a full time director, a program coordinator and an administrative assistant. Staff members are involved in campus wide leadership and state wide organizations to promote diversity. One important resource of these efforts is a group of student mentors selected to help new multicultural students connect with resources and learn from the experiences of more experienced U of I students. This mentor group is called P.A.C.E. (Peer Advising on the College Experience). OMA continuously works with other departments across the university to resolve issues that may hinder recruitment, retention or the success of multicultural students.

Multicultural student organizations serve a vital role in retention and helping to promote and support cultural diversity on the UI campus. Some of the organizations that are currently active are the Asian American/Pacific Islander Association (AAPIA), the Native American Student Association (NASA), The Native-American Graduate Student Association, Gamma Alpha Omega Sorority Inc., Iota Psi Phi Sorority Inc., Lambda Theta Alpha Sorority Inc,, the Interested Ladies of Lambda Theta Alpha, the University of Idaho's Black Student Union (UI-BSU), Organizacion de Estudiantes Latino Americanos (OELA), MEChA (Movimiento Estudiantil Chicanos de Aztlán), the Hispanic Business Association, Sigma Lambda Beta Fraternity Inc., GSA (the Gay Straight Alliance), WOCA (Women of Color Alliance), the Men of Vision, the Hispanic Business Association (HBA), Sabor de la Raza, CAMPOS (the College Assistance Migrant Program Organization of Students), ALI (the Association of Latin-Americans and Iberians), ASA (African Students Association), the Associated Students of African Descent, and UNITY. OMA assists these and other organizations in planning and executing campus activities of special interest to their group's members (e.g., cultural heritage months, student leadership retreat, organizational meetings, and campus educational cultural activities). Many meetings of these student groups are held in the Multicultural Student Center, which is located in Rooms 228 and 229 of the Teaching and Learning Center (TLC). For further information contact the Office of Multicultural Affairs main office in room 230 of the Teaching and Learning Center at 208-885-7716 or e-mail oma@uidaho.edu. To visit our web page visit www.uidaho.edu/oma.

Violence Prevention Programs and Resource Services

Resource Specialists provide violence prevention and risk reduction programming for students, staff and faculty on campus. Services include crisis intervention and referrals for on-going campus/community resources. Individual students, student leaders, university administrators, and community medical/legal professionals collaborate with Resource Specialists to create and implement positive campus policy. Risk reduction educational programs are available to all students at no cost. For more information call 208-885-2956 or come visit us in the Teaching and Learning Center Room 232.

Women's Center

The Women's Center staff is committed to providing a welcoming environment and a sense of community for all. At the Women's Center, we foster personal and professional growth through a network of support and services including educational programming, gender equity issues, information, referrals, and outreach.

Programs and services at the Women's Center include: brown-bag lunchtime programs (presentations and discussions covering a variety of topics); library (a circulating library of over 1,500 books and journals, primarily comprised of research, information, and literature regarding gender issues; information and referral to other agencies and services); lounge (a place to relax, read, study, get acquainted with others, and exchange ideas); newsletter (a publication announcing current programs and services, and news about women's issues). The center also assists with nontraditional student services and programs. The Women's Center is located in Room 109 of Memorial Gym.

Satisfactory Academic Progress

Students at the University of Idaho must maintain Satisfactory Academic Progress (SAP) to receive federal student financial aid. To meet SAP requirements, a student must maintain a minimum cumulative GPA, complete a certain percentage of attempted credits, and complete a degree program before exceeding 150% of required credits.

The requirements to maintain Satisfactory Academic Progress differ based on whether the student is in an undergraduate, graduate, or law degree program. The requirements can be found at www.uidaho.edu/financial-aid/keep-your-aid.

At a minimum, SAP will be reviewed at the end of each spring semester. Students not meeting the stated minimum requirements of SAP are no longer eligible to receive assistance under Title IV HEA programs. For purposes of evaluating satisfactory academic progress, the academic year is defined as summer, fall, and spring. Therefore, the summer performance prior to fall and spring will be included in the review. Students receiving financial aid for the first time are considered to be in good academic standing until they reach the defined annual evaluation time for SAP. It should be noted the eligibility criteria for financial aid differ from those for academic eligibility contained in regulation L-6 (p. 100).

Undergraduate students wishing to appeal a suspension of financial aid should complete a Petition for Financial Aid Reinstatement Form and contact the Dean's Office in the college in which they are enrolled. Graduate students should complete a Petition for Financial Aid Reinstatement before they contact the College of Graduate Studies, and law students should contact the College of Law. Any special circumstances concerning the student's academic progress for student financial aid will be reviewed on an individual basis. The Director of Student Financial Aid Services may reinstate a student based on special circumstances unique to that student.

Upon receiving a completed Petition for Financial Aid Reinstatement Form from the student, the student's academic dean (or designee) may recommend a waiver of satisfactory academic progress criteria due to special circumstances detailed on the petition form. If the petition is denied, the Director of Student Financial Aid Services will review the recommendation and make the final determination of whether to waive the suspension for the student. The decision of the academic college and the Director of Student Financial Aid Services may be appealed to the Student Financial Aid Committee, and their decision may be appealed to the Administrative Hearing Board.

If the petition is granted, the suspension will be waived for one term and all federal financial aid/eligibility will be reinstated unless the Academic Plan section of the Petition for Financial Aid Reinstatement form has been completed to encompass multiple terms.

Veterans' Benefits for Educational Assistance

The Office of Veteran Affairs assists veterans, dependents, reservists, and national guardsmen who are eligible for educational benefits through the Veterans Administration. Students expecting to receive veteran's benefits must apply for benefits and should contact the Office of Veteran Affairs at least six weeks before the beginning of each semester.

To qualify for payments, all veterans must be released under honorable conditions. To receive full benefits, a veteran must be pursuing an approved course of study leading to a degree or other professional objective. To be considered full time, undergraduate students must carry 12 credits or the equivalent, and graduate students must carry 9 credits or the equivalent (see regulation O-1 (p. 105)).

An advisory service is available to veterans and additional information, advice on benefits, or application forms may be obtained by writing to the veterans' advisor in the Office of the Dean of Students, PO Box 442431, Moscow ID 83844-2431, (208-885-7979); or online at www.uidaho.edu/dos.

FEES AND EXPENSES

The rates and procedures in this section are subject to change without notice.

The Board of Regents of the University of Idaho approves rate changes each April. For the most current rate information, go to www.uidaho.edu/current-students/student-accounts.

Students are encouraged to register early for classes at the University of Idaho. Information about the registration process is available from the Registrar's Office at www.uidaho.edu/registrar or 208-885-6731. Information regarding fees is available from the Student Accounts Office at www.uidaho.edu/current-students/student-accounts or 208-885-7447.

Student Accounts and Cashiers

Bruce Pitman Center; 208-885-7447; acctrec@uidaho.edu; www.uidaho.edu/current-students/student-accounts

The Student Accounts Office coordinates charges and billing for student's accounts including tuition and fee charges; room, meals, and family housing charges; student health center, library over dues, parking tickets, and other miscellaneous charges. The office also collects payments, administers payment plans, distributes financial aid refunds, and assists students who have a third party sponsor.

Billing and Payment Information

Students are email billed in July for fall semester and e-mail billed in January for spring semester. Students are also e-mail billed monthly throughout the semester for unpaid balances. All semester fees and tuition are due on or before the first day of each semester. Charges incurred over the course of the semester are considered due in full with 10 days of the posting date. The University of Idaho does not drop courses for nonpayment. Students are responsible for dropping courses prior to the first day of the term to avoid being billed and graded. Accounts with balances due greater than $500 will be blocked from adding/dropping/registration. Transcripts will not be released for students owing the university. Federal loan and grant regulations do not permit using federal financial aid to pay a balance from a prior aid year. Students may access their account information on Vandal Web www.vandalweb.uidaho.edu.

Failure to receive a bill does not relieve students from payment responsibilities.

Credit card payments for fees, tuition, and room and board are not accepted at the cashier's window; these payments need to be made online through Vandal Web. A 2.75% service fee is assessed on credit cards payments of student fees, tuition, and room and board. The fee will not apply to incidental charges, like parking tickets, health center charges, etc. that are paid by credit card at the cashier's window. The University's web check application allows customers to pay online with a checking account and is not subject to the 2.75% service fee.

The Family Educational Rights and Privacy Act of 1974, as amended, also known as the Buckley Amendment, is a Federal law that governs the confidentiality of student records. Generally, the law requires that educational institutions maintain the confidentiality of what are termed "education records," ensures that each student has access to his or her education records, and provides students with a limited opportunity to correct erroneous education records. This means that the University cannot release student records (grades, account information, class schedule, student ID, etc) to anyone other than the student without written consent from the student. A Consent to Release Information form is available for the student to complete and return to the University at www.uidaho.edu/current-students/student-accounts/forms-and-downloads.

E-mail Usage and On-line Account Access: The UI's official e-mail policy states, "A University assigned student e-mail account shall be the University's official means of e-mail communication with any student required to have a UI e-mail account. Students are responsible for all information sent to them via their University assigned e-mail account." Accordingly, the Student Accounts Office will use the official UI e-mail address to communicate with students. We send interim billing notices and other information using e-mail only, and it is essential that all students regularly check their UI e-mail accounts. Student Account information is available on Vandal Web under the Student Tab, then Student Accounts, then Student Accounts Center. If parents or other individuals need access to student billing information, the student is responsible for granting them access to the information.

Student Financial Aid Services

Bruce Pitman Center; 208-885-6312; finaid@uidaho.edu; www.uidaho.edu/financial-aid

The office of Student Financial Aid Services assists students and their parents who apply for financial assistance in the form of scholarships, grants, loans, and part-time work to help pay the cost of attending college. These programs may include scholarships, Federal Pell Grants, Federal Supplemental Educational Opportunity Grants (FSEOG), Federal or Idaho State Work Study Programs (FWS or IWS), Federal Direct Loans, Federal Direct Graduate PLUS, and Federal Direct Parent Loans to Undergraduate Students (PLUS). Financial aid is expected to supplement student and family resources. The office also assists students in finding part-time jobs off campus.

Application Process

Priority Dates

Because funds are limited, to receive priority consideration for all available funds, student applicants must submit the Free Application for Federal Student Aid (FAFSA) to the federal processor by the priority date each year. The priority date for 2019-2020 is December 1. This priority date applies to incoming and continuing students, and students starting both fall and spring semesters. The link to the FAFSA page can be found on the Financial Aid homepage, https://www.uidaho.edu/financial-aid. In addition to the FAFSA, students who are new to the university must also have a complete application for admission on file by the December 1 priority date. Students who meet both priority dates will receive first consideration for funds for which they qualify. Students who do not meet both priority dates will still be considered for the guaranteed scholarship programs, Federal Pell Grants, and Federal Direct Loans which are available throughout the year.

Enrollment

Financial aid during the academic year is usually awarded in expectation of full-time enrollment: 12 credits per semester for undergraduate students, 10 credits per semester for law students, and 9 credits per semester for graduate students. If a student is receiving aid as a full-time student, he or she must be registered as a full-time student to receive the aid on the first day of class. Students are required to enroll full-time to receive scholarships, unless the donor specifies special circumstances allowing part-time enrollment. All students must enroll at least half-time (6 credits per semester for undergraduate students or 5 credits per

semester for graduate and law students) to be eligible for Direct Loans. Students must be enrolled in the required number of credits through the 10th day of classes (census date) of the semester to continue receiving financial aid and scholarships for the semester.

For federal loan eligibility determinations, the following enrollment classifications will be used. Undergraduate enrollment will be 6-8 credits for half-time, 9-11 credits for three quarter time, and 12 or more credits for full time. Graduate enrollment will be 5-6 credits for half time, 7-8 credits for three quarter time, and 9 or more credits for full time. Law enrollment will be 5-6 credits for half time, 7-9 credits for three quarter time, and 10 or more credits for full time.

Work Study

Students who are awarded Federal Work Study or Idaho State Work Study must earn their award amount through offered part-time employment. Students must indicate their interest in the Work Study program on the FAFSA. Awards based on financial need and available funds are made to students who meet the priority dates.

Direct Loans

The University of Idaho participates in the Federal Direct Loan Program. Loan funds are provided to the student directly from the U.S. Department of Education through the University of Idaho rather than coming from a bank or lender. Students who accept these loans are asked to sign a Master Promissory Note (MPN) and complete Entrance Counseling. Students only need to sign a MPN and complete Entrance Counseling once every 10 years. Once the signed MPN and Entrance Counseling are received, the funds will be credited to the student's account.

Eligible Programs

Students who have one or more bachelor's degrees or are working toward an additional undergraduate degree or a teaching certificate, and are not yet admitted to graduate school are considered to be second degree-seeking undergraduates and are not eligible for federal grant programs (Pell and SEOG). They are restricted to undergraduate borrowing limits for loan programs. Graduate Students and students in the College of Law are eligible to apply for Direct Unsubsidized and Graduate PLUS Loans. Non-degree-seeking and certificate only students (those not enrolled in a degree program) are not eligible for any type of federal financial aid. Correspondence classes are not included in the determination of enrollment status.

Satisfactory Academic Progress

Students at the University of Idaho must maintain Satisfactory Academic Progress (SAP) to receive federal student financial aid. To meet SAP requirements, a student must maintain a minimum cumulative GPA, complete a certain percentage of attempted credits, and complete a degree program before exceeding 150% of required credits.

The requirements to maintain Satisfactory Academic Progress differ based on whether the student is in an undergraduate, graduate, or law degree program. The requirements can be found at www.uidaho.edu/financial-aid/keep-your-aid.

At a minimum, SAP will be reviewed at the end of each spring semester. Students not meeting the stated minimum requirements of SAP are no longer eligible to receive assistance under Title IV HEA programs. For purposes of evaluating satisfactory academic progress, the academic year is defined as summer, fall, and spring. Therefore, the summer performance prior to fall and spring will be included in the review. Students receiving financial aid for the first time are considered to be in good academic standing until they reach the defined annual evaluation time for SAP. It should be noted the eligibility criteria for financial aid differ from those for academic eligibility contained in regulation L-6 (p. 100).

Undergraduate students wishing to appeal a suspension of financial aid should complete a Petition for Financial Aid Reinstatement Form and contact the Dean's Office in the college in which they are enrolled. Graduate students should complete a Petition for Financial Aid Reinstatement before they contact the College of Graduate Studies, and law students should contact the College of Law. Any special circumstances concerning the student's academic progress for student financial aid will be reviewed on an individual basis. The Director of Student Financial Aid Services may reinstate a student based on special circumstances unique to that student.

Upon receiving a completed Petition for Financial Aid Reinstatement Form from the student, the student's academic dean (or designee) may recommend a waiver of satisfactory academic progress criteria due to special circumstances detailed on the petition form. If the petition is denied, the Director of Student Financial Aid Services will review the recommendation and make the final determination of whether to waive the suspension for the student. The decision of the academic college and the Director of Student Financial Aid Services may be appealed to the Student Financial Aid Committee, and their decision may be appealed to the Administrative Hearing Board.

If the petition is granted, the suspension will be waived for one term and all federal financial aid/eligibility will be reinstated unless the Academic Plan section of the Petition for Financial Aid Reinstatement form has been completed to encompass multiple terms.

Scholarships

Students who wish to apply ONLY for scholarships not based on financial need must do one of the following in order to receive consideration:

1. Students who are attending the university for the first time need to have a complete application for admission, including all transcripts and required test scores (freshmen), on file by the December 1 priority date;
2. Students who are enrolled at the university during the prior spring semester in at least 9 credits for undergraduate students, 10 credits for law students, or 6 credits for graduate students are considered automatically (without completing any additional forms) for scholarships not based on financial need;
3. Students who are enrolled at the university for the prior spring semester but in less than 9 credits for undergraduate students, 10 credits for law students, or 6 credits for graduate students will need to notify the Associate Director for Scholarships in Student Financial Aid Services by December 1 of their interest in scholarships not based on financial need; and
4. Students who previously attended the university but were not enrolled during the prior spring semester, must notify the Associate Director for Scholarships in the Office of Student Financial Aid Services of their intent to enroll by the December 1 priority date.

Athletic Scholarship Appeal

Students who have had their athletic scholarship aid reduced or eliminated may appeal the loss of funds by submitting an appeal in writing to the chair of the Student Financial Aid Committee.

Financial aid policies and procedures are subject to change without notice to assure compliance with federal, state and university regulations. The Office of Student Financial Aid Services may be contacted for current

information (208-885-6312). Additional information is available at the Financial Aid website, www.uidaho.edu/financial-aid.

Annual Expenses

Estimated annual expenses include the cost of undergraduate student fees, nonresident tuition (if applicable), graduate/law/architecture fees (if applicable), room and board, books, and miscellaneous costs (clothing, laundry, transportation, incidentals, social/recreational expenses, fraternal affiliations, and personal needs). For an estimated cost of attendance, see the Financial Aid website, www.uidaho.edu/financialaid.

Students can choose to pay fees in installments. Payment information is shown in the "Deferred Payment of Fees" section further on in this catalog section. Personal checks, bank drafts, money orders, travelers checks, Discover, VISA, and MasterCard are accepted by the university.

Full/Part-Time Registration Fees

Architecture Dedicated Fee

The State Board of Education granted approval to charge a professional fee to all College of Art & Architecture students on a semester basis over and above general tuition and fees. The fee is levied in addition to undergraduate student fees and, if applicable, nonresident tuition. Undergraduate students carrying 10 or more credits or graduate students carrying 9 or more credits pay the full time Professional fee. Undergraduate students carrying 9 credits or less credits or graduate students carrying 8 or less credits pay the part-time Professional fee. The Professional fee is used to directly support technology and computing for students and faculty, supplement budgets, hire temporary faculty, support the college's visual and design resource centers, cover professional accreditation costs, and partially support student field trips, guest lecturers and student organizations. See the Student Accounts website, www.uidaho.edu/current-students/student-accounts, for current fee rates.

Graduate Tuition Fee

Graduate students pay this fee in addition to the undergraduate fee and, if applicable, nonresident tuition. Students carrying nine or more credits will pay the full-time Graduate Tuition fee; students carrying eight credits or less pay the part-time Graduate Tuition fee. See the Student Accounts website, www.uidaho.edu/current-students/student-accounts, for current fee rates.

Law Fee

Law students pay the graduate fee and the law fee in addition to the undergraduate student fee and, if applicable, nonresident tuition. Students carrying nine or more credits will pay the full-time Law fee; students carrying eight credits or less pay the part-time Law fee. See the Student Accounts website, www.uidaho.edu/current-students/student-accounts, for current fee rates.

Undergraduate Student Fee

Unless exempted, all undergraduate students carrying 10 or more credits, all graduate students carrying 9 or more credits, and all research/instructional assistants (including faculty-staff spouses) on full appointment pay the full-time undergraduate student fees. Undergraduate students carrying nine credits or less and graduate students carrying 8 or less credits pay the part-time undergraduate student fees. Undergraduate and non-degree students enrolling in graduate courses must also pay the appropriate graduate fee for graduate level courses. In addition, students in certain divisions may need to pay special fees (see "Special Fees" below). See the Student Accounts website, www.uidaho.edu/current-students/student-accounts, for current fee rates.

Payment of full-time fees covers most laboratory and course charges and entitles the student to membership in the Associated Students University of Idaho (ASUI), to a nontransferable student identification card, to the services of the Alumni Office, and to the other services and facilities maintained by the university for the benefit of the students, subject to charges for special services and the payment of the special fees listed below. No reduction in fees can be made for students who may not want to use any part of these services.

WUE Fee

The Western Undergraduate Exchange Program fee is equal to 50 percent of the institution's full-time undergraduate student fee. This fee is in addition to the undergraduate student fees; nonresident tuition is not assessed to WUE students. See the Student Accounts website, www.uidaho.edu/current-students/student-accounts, for current fee rates.

Nonresident Tuition Fee

Students who are classified as nonresidents of the state of Idaho pay this fee in addition to the student tuition and fees. Undergraduate students carrying ten or more credits and graduate students carrying nine or more credits will pay the full-time nonresident tuition. Undergraduate students carrying nine credits or less and graduate students carrying eight credits or less pay the part-time nonresident fee. See the Student Accounts website, www.uidaho.edu/current-students/student-accounts, for current fee rates. For tuition purposes, a student may be classified as an Idaho resident; see the Registrar's Office website, www.uidaho.edu/registration/residency, for more information. Students currently enrolled at UI may obtain information and interpretation of the residency regulations from the Registrar's Office. Students who have not yet enrolled may contact the Admissions Office.

Veterans' Benefits for Educational Assistance

The Office of Veteran Affairs assists veterans, dependents, reservists, and national guardsmen who are eligible for educational benefits through the Veterans Administration. Students expecting to receive veteran's benefits must apply for benefits and should contact the Office of Veteran Affairs at least six weeks before the beginning of each semester.

To qualify for payments, all veterans must be released under honorable conditions. To receive full benefits, a veteran must be pursuing an approved course of study leading to a degree or other professional objective. To be considered full time, undergraduate students must carry 12 credits or the equivalent, and graduate students must carry 9 credits or the equivalent (see regulation O-1 (p. 105)).

An advisory service is available to veterans and additional information, advice on benefits, or application forms may be obtained by writing to the veterans' advisor in the Office of the Dean of Students, PO Box 442431, Moscow ID 83844-2431, (208-885-7979); or online at www.uidaho.edu/dos.

Special Fees

Drop Fee ($5)

This fee is charged for each course dropped with a W after the tenth day of the semester, excluding full semester withdrawals.

Admission Application Fee

For information concerning the application fee, see the section headed Application Procedures (p. 42).

Audit Fee

Students who audit a course pay this fee in addition to any special course fee unless the student has already paid the full-time student fees for that term. This fee is equivalent to the Part-Time Fee. See the Student Accounts website, www.uidaho.edu/current-students/student-accounts, for current fee rates.

Graduation Fee ($25)

This fee is payable at the time the student applies for each degree to be awarded by the university. An additional late service charge of $35 is charged for each application filed after the date listed in the registration calendar.

Extramural Credit Application Fee ($35). Extramural Credit Fee ($25 per credit granted)

Students seeking extramural credits earned under regulation I-2 must pay the application fee at the time of application. The per-credit fee is charged to the student's account at the time the credit is granted.

Lab and Course Fees

Special fees are charged for certain courses. Examples include the College of Letters, Arts and Social Sciences that charge a general shop fee and the Movement Sciences department that charges special fees for physical education courses. Special Course fees are noted in the Comment section of the course information in the online Class Schedule.

Late Registration / Late Payment Service Charge ($75)

Students who register after the first day of classes or pay after the first day of classes must pay this fee.

Late Payment Fee ($100)

Students who register or pay after the tenth day of classes must pay this fee in addition to the Late Registration/Late Payment Service Charge. Students who have not paid by the last day of month in September, October, or November for Fall and February, March, or April for Spring will be charged an additional $100 late payment fee each month the balance is not paid in full.

Music Special Fees

All students who enroll in individual instruction pay a course fee. Additionally, fees are charged for some required courses within the music major curriculum. For current fees, consult the School of Music (208-885-6231) or see the Class Schedule.

Petition Fee ($10)

This fee is charged for each petition submitted to the Academic Petitions Committee or Graduate Council.

Publication and Microfilming Fee ($65)

At the time the application for the degree is filed, every doctoral candidate pays this fee for the publication of the dissertation abstract and for the microfilming of the dissertation.

Registration Fee for Employee Dependents

Under the Employee Dependent Education Tuition & Fee Waiver Program (FSH 3780), enrollment in the University for reduced fees (50% reduction of in-state tuition and fees) is extended to the dependents (as defined by the Federal Income tax code, Sect. 152) of board-appointed UI employees on regular appointment who work at least half-time, including those on official leave. The Employee Dependent Tuition & Fee Waiver Program is a qualified tuition reduction plan under Sect. 117 of the Internal Revenue Code. Under this program, fees waived for enrollment in undergraduate courses are exempt from federal, state and social security taxes. Reduced fees for graduate level courses (500 and above) are subject to tax; the tax is payable by the employee and deductions are made from the employee's paycheck by semester. Provisions of federal or state law may, however, change at any time. Please consult your personal tax advisor for implications to your individual situation.

Registration Fee for Senior Scholars

Idaho residents 60 years of age and older are permitted to enroll in courses, on a space-available basis. The fee is $20 plus $5 per credit. Senior scholars are enrolled after the regular registration days. In addition to this fee, special course fees for specific courses are also assessed (see Lab and Course Fees). Registration under this program entitles the student to instruction and library privileges only, and does not include insurance, student health services, ASUI membership, Recreation Center privileges or free admission to athletic events. Seniors who are graduate or instructional assistants may not use the Senior Scholar waiver.

Registration Fee for Staff

Under the Employee Educational Assistance Program (UI *Faculty-Staff Handbook* Sections 3740 and 3760), salaried UI employees on regular appointment who work at least half time (including those on official leave) may enroll in the university at the reduced rate of $20 plus $5 per credit. Special Lab and Course Fees must be paid by employee. Reduced fees are not eligible for refunds. The Educational Fee and Tuition Reduction Program is a qualified tuition reduction plan under Section 117 of the Internal Revenue Code for undergraduate courses. Under this program, waivers for undergraduate fees are exempt from federal and state employment taxes. For graduate courses, the program qualifies as an Educational Assistance Program under Section 127. Under this program, fee waivers for graduate courses, 500 level and above, are exempt from employment taxes up to an annual amount of $5250.00. The tax is payable by the employee and deductions are made from the employee's paycheck by semester.

Registration Fee for Staff Spouse

Under the Educational Fee and Tuition Reduction Program, enrollment in the University for reduced fees ($20 registration fee plus $5 a credit) is extended to the spouses of board-appointed UI employees on regular appointment who work at least half-time (including those on official leave). The Educational Fee and Tuition Reduction Program is a qualified tuition reduction plan under Section 117 of the Internal Revenue Code. Under this program, fees waived for enrollment in undergraduate courses are exempt from federal, state and social security taxes; fees waived for graduate level courses (above 500) are subject to tax; tax is payable by

the employee. Provisions of federal or state law may, however, change at any time. Reduced fees are not eligible for refunds.

Student Health Service Fees

Student Health Services provide a broad spectrum of outpatient medical care services. Please visit the Student Health Services website, www.uidaho.edu/studenthealth for hours of operation, health insurance plans, scope of services, and fee for services. Student health insurance fees are also available on the Student Accounts website, www.uidaho.edu/current-students/student-accounts.

Thesis/Dissertation Binding Fee ($25.00)

At the time the application for the degree is filed, every candidate for an advanced degree who is submitting a thesis or dissertation (including such terminal projects as musical compositions) pays this fee to have two copies of the document bound for the library.

Transcript Fee ($12.50)

Official transcripts may be ordered at a cost of $12.50 per copy. For instructions on ordering transcripts, see the Registrar's website, www.uidaho.edu/registrar.

WWAMI Fee

First-year students who enroll in the WWAMI Medical Education Program pay this fee in addition to the undergraduate student fee. For the current WWAMI fee, contact the Student Accounts Office (208-885-7447).

Deferred Payment of Fees

The University of Idaho offers payment plans to students. Fees, tuition, on-campus housing, meal plans, and SHIP charges are eligible to be included in a payment plan. Payment plans require an enrollment fee at the time you start the plan. Please contact Student Accounts for additional information at 208-885-7447 or go to www.uidaho.edu/current-students/student-accounts.

Refund of Fees

Regular Withdrawals

Students who withdraw in accordance with the regulations governing withdrawals are entitled to the following refund of tuition and fees. Refunds are calculated on total fees and tuition charged. Refunds are based on the official date of withdrawal, which is considered to be the date the student begins the withdrawal process. Reduced fees paid by individuals using the employee/employee spouse educational benefit, the senior citizen waiver benefit, or the employee dependent waiver benefit are not eligible for refunds. Special lab and course fees are non-refundable after the second week of class unless otherwise specified by the department charging the fee. All requests for refund of fees must be formally initiated in the semester in which the fees (charges) were incurred. Applicable federal Title IV financial aid funds will be returned to the Department of Education based on statutory regulations.

1. When the official date of withdrawal is prior to or on the first day of classes, 100 percent of fee and tuition charges are refunded.
2. When the official date of withdrawal is after the first day of classes but before the close of the second week of classes, 100 percent of fee and tuition charges are refunded.
3. When the official date of withdrawal is after the close of the second week of classes, no refund is given.

Medical Withdrawals

Students who withdraw in accordance with the regulations governing **medical withdrawals** are covered under the Financial Credit Policy for Medical Withdrawals. The University of Idaho does not generally issue refunds after the refund deadline. However, in instances of medical withdrawals, to encourage students to continue pursuing their education, the University issues financial credits based on the chart below, subject to the following terms:

1. Financial credits are calculated based on the total tuition and fees charged.
2. Financial credits are based on the effective date of the medical withdrawal, as determined by the authorized University official or committee. However, the effective date for financial credit cannot be earlier than the date the student requests a medical withdrawal. In instances where the effective date of a medical withdrawal is before the date a student requests a medical withdrawal, financial credits will be determined as of the date the student requests a medical withdrawal.
3. Financial credits may be used only by the student who was issued such credit. It is not transferable or assignable to others.
4. Reduced fees arrangements, including, but not limited to, any reduced fees paid by individuals using the employee educational benefit, the employee spouse educational benefit, the employee dependent waiver benefit, the senior citizen waiver benefit, or any other institutional waivers are not eligible for financial credits.
5. Special lab and course fees are non-refundable after the second week of the semester, unless otherwise specified by the department charging the fee, and are also not eligible for financial credits.
6. Applicable federal Title IV financial aid funds will be returned to the Department of Education based on statutory regulations. UI policies and protocols regarding scholarships and institutional aid will also apply. Any financial credit received under this policy shall be automatically applied first to pay any debt owed by the student.
    a. When the results of the return of Title IV financial aid funds create an owing balance on the account, any financial credit will be automatically applied to the owing balance on the account. If there is still an owing balance after the financial credit is applied, the student will be billed and the owing balance will be due within ten (10) days of the billing date.
    b. When the results of the return of Title IV financial aid funds and scholarships create a credit balance on the account, the student will not be issued a refund, but rather a financial credit will be placed in a holding account to be used by the student to pay tuition and fees in future semesters. Once the student is registered and charged tuition and fees for a future semester, the student is responsible for requesting that Student Accounts apply the financial credit to pay tuition and fees posted on the student's account.
7. Any financial credit received under this policy will be valid for the following six semesters (with the summer counting as one semester). For example, if financial credit is received for the Spring 2013 semester, such financial credit must be used by the Spring 2015 semester.
    a. Students who are unable, for medical reasons, to use the financial credit before it expires may petition to request an extension of the expiration date, by following the appeal process described below.
8. Student appeals under this policy are limited to

a. Mistakes by the University in applying this policy.
b. Requests for extension of credit expiration due to medical reasons.
c. Requests for a result different from that outlined in this policy due to exceptional circumstances that pose unusual hardships. Appeals must be submitted to Vice President for Finance and Administration or designee ("VPFA"), must indicate which of the three reasons above is the basis for the appeal, and must include supporting documentation.
    i. In cases where exceptional circumstances pose unusual hardships, the VPFA may determine that a result different from that outlined in this policy is appropriate.

9. Any time before the financial credit expires, a student who received a financial credit under this policy may elect to receive 50% of amount of financial credit in the form of a refund. To do so, students must fill out the Medical Withdrawal Refund Election Form and provide it to Student Accounts before the financial credit expires. This election is final and cannot be reversed.

Medical Withdrawal Fall & Spring Deadlines/Refunds Percentages

Students who withdraw in accordance with the regulations governing medical withdrawals are entitled to the following financial credit of tuition and fees during the Fall and Spring semesters:

1. Any withdrawal during the first ten days of the semester is treated as a regular withdrawal and is subject to the Tuition and Fee Refund Policy.
2. When the effective date falls after the first ten days and within week 3 and week 4 of the semester, 75% of tuition and fees charged is credited.
3. When the effective date falls within week 5 through week 8 of the semester, 50% of tuition and fees charged is credited.
4. When the effective date falls within week 9 through week 12 of the semester, 25% of tuition and fees charged is credited.
5. When the effective date falls within week 13 and week 14 of the semester, 10% of tuition and fees charged is credited.
6. When the effective date falls within week 15 and week 16 of the semester, 0% of tuition and fees charged is credited.

Medical Withdrawal Summer Deadlines/Refund Percentages

Students who withdraw in accordance with the regulations governing medical withdrawals are entitled to the following financial credit of tuition and fees during the Summer semester.

1. Any withdrawal during the first three days of the semester is treated as a regular withdrawal and is subject to the Tuition and Fee Refund Policy.
2. When the effective date falls after the first three days and within a week that corresponds to 25% or less of the term for that course, 75% of tuition and fees charged is credited.
3. When the effective date falls within a week that corresponds to 25.1% to 50% of the term for that course, 50% of tuition and fees charged is credited.
4. When the effective date falls within a week that corresponds to 50.1% to 75% of the term for that course, 25% of tuition and fees charged is credited.
5. When the effective date falls within a week that corresponds to 75.1% to 87.5% of the term for that course, 10% of tuition and fees charged is credited.
6. When the effective date falls within a week that corresponds to 87.51% or more of the term for that course, 0% of tuition and fees charged is credited

Human Resources, Student and Temporary Hiring

415 W. 6th St; 208-885-3609; employment@uidaho.edu; www.uidaho.edu/human-resources

Human Resources, assists students in gaining employment experience to supplement financial support. Office hours are Monday through Friday from 8:00 a.m. to 5:00 p.m. Hiring departments across campus post available positions through the Human Resources office. All University of Idaho students are eligible to apply for positions listed on the Human Resources website. Job vacancies, applications, and additional information are available online at www.uidaho.edu/human-resources. All employment and payroll forms for students are completed at the Human Resources office.

Off-Campus Employment

Job Location and Development (JLD) works with the local business community to develop off-campus part-time, full-time, and summer jobs for students. The JLD office is located on the first floor of the SUB in the Student Financial Aid Office. JLD services are available to all students. Phone: 208-885-2778, website: www.uidaho.edu/financialaid.

In addition, the Idaho Department of Labor (https://labor.idaho.gov/dnn/idl/JobSeekers.aspx), located at 1350 Troy Highway, behind the Eastside Marketplace in Moscow, is a free service and lists jobs in the community. The classified sections of the Moscow/Pullman Daily News (https://dnews.com) and the campus paper, The Argonaut (https://www.uiargonaut.com), carry job listings.

HOUSING & RESIDENCE LIFE

Housing & Residence Life at the University of Idaho offers on-campus residence hall and apartment living options for students at all levels. Please visit the Housing & Residence Life website (http://www.uidaho.edu/housing) for more information.

Residence Halls

Housing & Residence Life offers a variety of living communities for first-year through upper-level students. With four residence halls to choose from and over 1,800 students living on campus, students will experience an opportunity of a lifetime. Please visit the Housing & Residence Life website (http://www.uidaho.edu/housing) for a complete list of options and instructions on how to apply.

The University of Idaho has a first-year student live on requirement. For information on this policy please visit the Dean of Students website (https://www.uidaho.edu/student-life/live-on-campus/live-on-requirement) or contact 208-885-6757.

Living and Learning Communities

The Living and Learning Communities (LLC) are designed for upper division students who want a hybrid of a residence hall and an apartment. The buildings include a full kitchen, community living rooms, dining rooms, dens with a fireplace and study areas, so students can relax or form instant study groups. The suite layout of the rooms houses two to five people per suite. The suite offers a common living area with air conditioning, small kitchenette with sink, refrigerator and microwave, a shared bathroom and single, double, super double or super single rooms. Some unique themed communities in the Residence Halls and the LLC include:

Graduate Student Housing

Housing & Residence Life offers a variety of living communities for graduate students. With three residence halls and three apartment communities to choose from, graduate students can live conveniently on the University of Idaho campus. Please visit the Housing & Residence Life website (http://www.uidaho.edu/housing) for a complete list of options and instructions on how to apply.

Apartment Housing

For married students, students with children, graduate students, and students over 25 years old, the university offers affordable housing options that support your academic needs. For more detailed information about living in University Apartments visit the Housing website at www.uidaho.edu/housing.

Elmwood

University Housing offers our Elmwood apartments to full time students who are 19 years of age or older. Please visit the University Housing website at www.uidaho.edu/universityhousing for further information.

Off-Campus Living

Moscow offers a variety of off-campus housing options. Information sources for off-campus housing include:

1. the Off-Campus Housing List, published weekly by ASUI (UI's student government) and available at the Bruce Pitman Center, phone 208-885-6331, and
2. Moscow's daily paper, the Moscow-Pullman Daily News, phone 208-882-5561.

Quality Summer Conferences

The university houses numerous summer camps and conferences, bringing many participants to campus each year. Contact Conferences, Events, and Information Services at 208-885-6662 for more information on conference services.

Fraternity and Sorority Life

875 Line Street, 208-885-6757, greek@uidaho.edu, www.uidaho.edu/student-life/greek

Sororities

The University of Idaho is home to fourteen sororities on campus. Four chapters are governed by the Multicultural Greek Council (MGC): Gamma Alpha Omega Sorority Inc., Lambda Theta Alpha Latin Sorority Inc., Kappa Delta Chi Sorority Inc., and Sigma Lambda Gamma National Sorority Inc. These organizations are inclusive and accept students regardless of ethnicity or race; you don't need to identify with a specific cultural or racial identity to qualify for membership. MGC Sororities engage in membership intake semiannually by hosting a showcase week where interested members take the step forward and attend informational events to determine if sorority membership is right for them. MGC sorority members may choose to live together, but they do not have a sorority house. For recruitment event information for MGC Sororities, please visit uidaho.edu/greeklife or call 208/885-6757.

There are ten Panhellenic Council (PHC) sorority chapters on the University of Idaho campus. Each chapter owns and operates its own chapter house. Our PHC chapters are: Alpha Gamma Delta, Alpha Phi, Delta Delta Delta, Delta Gamma, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, and Pi Beta Phi. The average cost for living in a sorority is $4,300 a semester, which includes charges for room, board, membership dues, and all activity fees.

Membership in a PHC sorority is done by mutual selection between the potential new member and the sorority through either a summer (formal) recruitment process or continuous-on-bidding which is informal and held outside of formal recruitment periods. PHC also holds an organized, though informal, spring recruitment.. Women who are interested in PHC sorority living should call 208/885-6757 or visit our website at uidaho.edu/greeklife. The selection of members in each sorority is made primarily during Formal Panhellenic Sorority Recruitment, which is held in August before the beginning of the fall semester. For more information on Panhellenic Sorority Recruitment, please visit uidaho.edu/greeklife.

Fraternities

The University of Idaho recognizes nineteen fraternities on campus. Among these, three chapters are governed by the Multicultural Greek Council (MGC): Omega Delta Phi Fraternity Inc., Lambda Theta Phi Latin Fraternity Inc., and Sigma Lambda Beta International Fraternity Inc. These organizations are inclusive inclusive and accept students regardless of ethnicity or race; you don't need to identify with a specific cultural or racial identity to qualify for membership. Fraternities affiliated with MGC. engage in the membership intake process semiannually by hosting a showcase week where interested members take the step

forward and attend informational events to determine if fraternity membership is right for them. For recruitment event information for MGC Fraternities, please visit uidaho.edu/greeklife or call 208/885-6757.

Sixteen Interfraternity Council (IFC) fraternities are recognized on the University of Idaho campus. Our IFC fraternities are: Alpha Gamma Rho, Alpha Kappa Lambda, Beta Theta Pi, Delta Sigma Phi, Delta Tau Delta, FarmHouse, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta (FIJI), Pi Kappa Alpha, Phi Kappa Tau, Pi Kappa Phi, Sigma Chi, Sigma Nu, and Theta Chi.

Membership in a fraternity is done by mutual selection, where the fraternities extend invitations to join and potential members either accept or decline these invitations during summer (formal) recruitment. IFC fraternities also engage in an open 365 day bidding process where they can engage members and offer bids to them throughout the year. The average cost for living in a fraternity is $3,300 a semester, which includes room, board, membership dues, and activity fees. For recruitment event information for IFC Fraternities, please visit uidaho.edu/greeklife or call 208/885-6757.

IFC fraternities may or may not offer housing (this is dependent on each individual chapter and their housing availability. Anyone interested in IFC fraternity membership should call 208/885-6757 or visit our website at www.uidaho.edu/greeklife.

For more information on Fraternity and Sorority Life at the University of Idaho, please visit uidaho.edu/greeklife, stop by the Office of Fraternity and Sorority Life in the Idaho Commons Room 302, call 208/885-6757; or email greek@uidaho.edu.

Multi-Cultural Fraternities and Sororities

The University of Idaho has three multicultural fraternities and three multicultural sororities. These are: Sigma Lambda Beta, Omega Delta Phi, Gamma Alpha Omega, Lambda Theta Alpha, Lambda Theta Phi, and Sigma Lambda Gamma colony. Multicultural fraternities and sororities at the University of Idaho do have chapter houses and are open to all races and cultural backgrounds.

Membership is by invitation and takes place after school begins in the fall. If you are interested in joining you can call 208-885-6757 or e-mail greek@uidaho.edu.

The Multicultural Greek Council is a representative body of the current multicultural Greek organizations. The council coordinates recruitment activities, formulates policies, and provides community service opportunities. For more information visit our website at www.uidaho.edu/greeklife.

STUDENT HEALTH & COMMUNITY RESOURCES

- Child Care Services (p.)
- Conduct & Community Standards (p.)
- Dean of Students (p.)
- Human Resources, Student and Temporary Hiring (p.)
- Multicultural Affairs (p.)
- Student Health Insurance Program (p.)
- Student Health Services (p.)
- Student Rights, Conduct, & Records (p.)
- Veterans' Benefits for Educational Assistance (p.)
- Violence Prevention Programs and Resources (p.)
- Women's Center (p.)

Child Care Services

UI Children's Center, 421 Sweet Ave; www.uidaho.edu/student-affairs/childrens-center

The UI Children's Center offers childcare, early schooling, and after school programs for children from 6 weeks through 8 years of age. Accredited by the National Academy of Early Childhood Programs, the UI Children's Center offers a safe and nurturing environment as well as programs which promote the physical, social, emotional, and intellectual development of young children. For more information, call 208-885-6414 or visit their website, www.students.uidaho.edu/uikids.

The Margaret Ritchie School of Family and Consumer Sciences Child Development Laboratory provides childcare opportunities for preschool children. Call

208-885-6332 for information.

Conduct & Community Standards

To support the core values and mission of the University of Idaho, the staff within Conduct & Community Standards strives to uphold a balance student accountability with education and grown in regard to the Student Code of Conduct. If you need assistance with the Student Code of Conduct, please contact the Office of the Dean of Students at 208/885-6757.

Dean of Students

TLC 232; 208-885-6757; askjoe@uidaho.edu; www.uidaho.edu/dos

The University of Idaho is comprised of a diverse student population that requires the UI to have a diverse student services program. The Dean of Students Office provides a variety of services that focus on assisting students. Programs and services include advising students in living groups, as well as those off campus, ethnic minority students, and veterans. In addition, the Dean of Students Office coordinates New Student Orientation, Women's Center, Child Care Center, National Student Exchange Program, student leadership activities, fraternity/sorority programs, and student discipline/conduct activities.

This wide range of programs and services includes assisting families and students who may experience crisis situations that disrupt normal academic activities.

Staff members are trained to work with individuals and groups of students, or serve as a liaison between students, departments, and agencies on and off campus.

All of the services and programs are supportive of the academic mission of UI and are an integral part of the student's total education at the university.

Services offered by the Dean of Students Office are highlighted below.

Human Resources, Student and Temporary Hiring

415 W. 6th St; 208-885-3609; employment@uidaho.edu; www.uidaho.edu/human-resources

Human Resources, assists students in gaining employment experience to supplement financial support. Office hours are Monday through Friday from 8:00 a.m. to 5:00 p.m. Hiring departments across campus post available positions through the Human Resources office. All University of Idaho students are eligible to apply for positions listed on the Human Resources website. Job vacancies, applications, and additional information are available online at www.uidaho.edu/human-resources. All employment and payroll forms for students are completed at the Human Resources office.

Off-Campus Employment

Job Location and Development (JLD) works with the local business community to develop off-campus part-time, full-time, and summer jobs for students. The JLD office is located on the first floor of the SUB in the Student Financial Aid Office. JLD services are available to all students. Phone: 208-885-2778, website: www.uidaho.edu/financialaid.

In addition, the Idaho Department of Labor (https://labor.idaho.gov/dnn/idl/JobSeekers.aspx), located at 1350 Troy Highway, behind the Eastside Marketplace in Moscow, is a free service and lists jobs in the community. The classified sections of the Moscow/Pullman Daily News (https://dnews.com) and the campus paper, The Argonaut (https://www.uiargonaut.com), carry job listings.

Multicultural Affairs

Office of Multicultural Affairs; TLC. 230; 208-885-7716; fax: 208-885-9494; oma@uidaho.edu; www.uidaho.edu/oma

UI is committed to establishing and maintaining a campus environment that promotes cultural diversity. This is accomplished through the provision of student services that begin to address specific needs of Asian-American/Pacific Islander, Black or African-American, Chicano/Latino, and Native-American students. While offering targeted services and programs to these populations, OMA is fundamentally a campus wide resource meant to benefit the educational experience of the entire campus community by leading in the creation of an environment that supports multiculturalism and promotes inclusion.

The Office of Multicultural Affairs (OMA) provides assistance to these traditionally underrepresented students in the areas of advocacy, financial aid, and accessing university student support programs. OMA is staffed by a full time director, a program coordinator and an administrative assistant. Staff members are involved in campus wide leadership and state wide organizations to promote diversity. One important resource of these efforts is a group of student mentors selected to help new multicultural students connect with resources and learn from the experiences of more experienced U of I students. This mentor group is called P.A.C.E. (Peer Advising on the College Experience). OMA continuously works with other departments across the university to resolve issues that may hinder recruitment, retention or the success of multicultural students.

Multicultural student organizations serve a vital role in retention and helping to promote and support cultural diversity on the UI campus. Some of the organizations that are currently active are the Asian American/Pacific Islander Association (AAPIA), the Native American Student Association (NASA), The Native-American Graduate Student Association, Gamma Alpha Omega Sorority Inc., Iota Psi Phi Sorority Inc., Lambda Theta Alpha Sorority Inc., the Interested Ladies of Lambda Theta Alpha, the University of Idaho's Black Student Union (UI-BSU), Organizacion de Estudiantes Latino Americanos (OELA), MEChA (Movimiento Estudiantil Chicanos de Aztlán), the Hispanic Business Association, Sigma Lambda Beta Fraternity Inc., GSA (the Gay Straight Alliance), WOCA (Women of Color Alliance), the Men of Vision, the Hispanic Business Association (HBA), Sabor de la Raza, CAMPOS (the College Assistance Migrant Program Organization of Students), ALI (the Association of Latin-Americans and Iberians), ASA (African Students Association), the Associated Students of African Descent, and UNITY. OMA assists these and other organizations in planning and executing campus activities of special interest to their group's members (e.g., cultural heritage months, student leadership retreat, organizational meetings, and campus educational cultural activities). Many meetings of these student groups are held in the Multicultural Student Center, which is located in Rooms 228 and 229 of the Teaching and Learning Center (TLC). For further information contact the Office of Multicultural Affairs main office in room 230 of the Teaching and Learning Center at 208-885-7716 or e-mail oma@uidaho.edu. To visit our web page visit www.uidaho.edu/oma.

Student Health Insurance Program

Student Health Building; 208-885-2210; health@uidaho.edu; **www.uidaho.edu/current-students/student-health-services/ship**

The University of Idaho requires all full-time, fee-paying, degree-seeking undergraduate students enrolled in 12 or more credits; graduate/Law students enrolled in 9 or more credits; and all international students to submit proof of valid health insurance as a condition of enrollment. Students subject to the requirement may choose to rely on personal health insurance or enroll in UI's Student Health Insurance Program.

Student Health Services

Student Health Services; 208-885-6693; www.uidaho.edu/studenthealth

Student Health Services, in partnership with Moscow Family Medicine, provides a broad spectrum of outpatient medical care services. The medical staff includes Board-certified physicians, physician assistants, and nurse practitioners. Services include lab and X-ray, nutrition counseling, and psychiatry. Additional counseling services are available in cooperation with the Counseling and Testing Center.

Health education classes and wellness programs are available to students. These programs range from fitness and nutrition classes to substance abuse and smoking cessation courses. A list of programs and additional information is available at the Student Health Services web site, *www.uidaho.edu/studenthealth.*

The hours of operation, scope of services, and fee-for-service charge schedule are subject to change during the academic year. Please look for changes notices at the Student Health Services web site.

Student Rights, Conduct, and Records

The "Statement of Student Rights," "Student Code of Conduct," and "Student Records Policy" are published in the *Faculty-Staff Handbook* and in the booklet entitled "Policies and Information of Interest to Students." The booklet is available from the Office of the Dean of Students (TLC 232), the Office of Academic Affairs (Admin 104), and other locations around the campus. Members of the university community are urged to familiarize themselves with these basic documents.

Veterans' Benefits for Educational Assistance

The Office of Veteran Affairs assists veterans, dependents, reservists, and national guardsmen who are eligible for educational benefits through the Veterans Administration. Students expecting to receive veteran's benefits must apply for benefits and should contact the Office of Veteran Affairs at least six weeks before the beginning of each semester.
To qualify for payments, all veterans must be released under honorable conditions. To receive full benefits, a veteran must be pursuing an approved course of study leading to a degree or other professional objective. To be considered full time, undergraduate students must carry 12 credits or the equivalent, and graduate students must carry 9 credits or the equivalent (see regulation O-1 (p. 105)).
An advisory service is available to veterans and additional information, advice on benefits, or application forms may be obtained by writing to the veterans' advisor in the Office of the Dean of Students, PO Box 442431, Moscow ID 83844-2431, (208-885-7979); or online at www.uidaho.edu/dos.

Violence Prevention Programs and Resource Services

Resource Specialists provide violence prevention and risk reduction programming for students, staff and faculty on campus. Services include crisis intervention and referrals for on-going campus/community resources. Individual students, student leaders, university administrators, and community medical/legal professionals collaborate with Resource Specialists to create and implement positive campus policy. Risk reduction educational programs are available to all students at no cost. For more information call 208-885-2956 or come visit us in the Teaching and Learning Center Room 232.

Women's Center

The Women's Center staff is committed to providing a welcoming environment and a sense of community for all. At the Women's Center, we foster personal and professional growth through a network of support and services including educational programming, gender equity issues, information, referrals, and outreach.

Programs and services at the Women's Center include: brown-bag lunchtime programs (presentations and discussions covering a variety of topics); library (a circulating library of over 1,500 books and journals, primarily comprised of research, information, and literature regarding gender issues; information and referral to other agencies and services); lounge (a place to relax, read, study, get acquainted with others, and exchange ideas); newsletter (a publication announcing current programs and services, and news about women's issues). The center also assists with nontraditional student services and programs. The Women's Center is located in Room 109 of Memorial Gym.

INTERNATIONAL PROGRAMS

The International Programs Office (IPO) has campus-wide responsibility for international activities, including international student recruitment, student and faculty exchanges, intensive English language training, long- and short-term study abroad, and serves as a liaison with the community regarding international interests. IPO also acts as a clearinghouse for international education activities, training, development programs, research agreements, for faculty and student Fulbright scholarships, and provides support for international activities in the colleges. IPO is located in the Living and Learning Center at 901 Paradise Creek Street, Building #3, Ground Floor; phone 208-885-8984; fax 208-885-2859; e-mail ipo@uidaho.edu; www.uidaho.edu/international.

International Students

International students are an integral part of the ethnic diversity of the University of Idaho. Representing up to 90 countries from around the world, international students contribute significantly to the rich cultural atmosphere of UI.

International student services are provided by international student advisors (ISA's) in IPO. All matters pertaining to students' status with the Department of Homeland Security and the U.S. Department of State are handled by the ISA's, and they also serve as official liaisons between students and their consular offices or sponsoring agencies. ISA's are involved with the progress of international students at every stage of the educational process, and students are encouraged to visit an ISA regularly to discuss concerns or questions related to immigration matters and educational, financial, or cultural adjustments.

Once a student has been admitted, general information is provided about what to bring to the U.S., the U.S. educational system, and housing. A mandatory orientation before classes begin, answers initial questions and provides new students with information and skills to succeed in their academic programs as well as tips on cultural adjustment. Community contacts are arranged through the International Friendship Association (IFA). The IPO, IFA, and international student groups sponsor additional social, cultural, and educational activities.

Insurance

International students holding nonresident alien status must either purchase the UI's Student Health Insurance Plan (SHIP) for themselves and all accompanying dependents or document coverage of an equivalent insurance with the International Programs Office as part of their obligation to establish proof of financial responsibility for expenses incurred while attending the university. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See the insurance (p. 77) section in this catalog for more information.

American Language and Culture Program

The American Language and Culture Program (ALCP) offers full-time courses in intensive English for Academic Preparation. Courses are offered throughout the year, with two eight-week sessions during each of the fall and spring semesters and one six-week session in the summer. The program also offers specialized short-term programs by arrangement.

Students wishing to improve their English or achieve the required level of English language proficiency for admittance to UI can work toward that goal while living on or off the UI campus and attending the American Language and Culture Program (ALCP). The curriculum emphasizes reading, writing, speaking, listening, and grammar skills from beginning to advanced levels. At the University of Idaho, students who pass Level 5 may use their passing grades as a substitute for the English language proficiency examination for undergraduate admission and passing grades in level 6 for admission into many graduate programs. ALCP students take part in special cultural activities and learn about U.S. culture and U.S. university culture.

For more information and/or applications, contact ALCP through the International Programs Office located at the Living Learning Center at 901 Paradise Creek Street, Building #3, Ground Floor; Phone: 208-885-8984; Email alcp@uidaho.edu; Website: www.uidaho.edu/international/alcp.

Applicants to the University of Idaho, please note:

Deferred admission

Deferred admission may be granted to applicants who qualify academically, but who have not yet met UI's minimum English language proficiency requirement. In deferred status, students enroll in UI's American Language and Culture Program to achieve their department's English language requirement prior to being granted full admission and commencing their degree programs.

Concurrent Enrollment

Concurrent enrollment is available to ALCP students at Levels 5 and 6. With the consent of the ALCP coordinator and the instructor of the course(s), qualified ALCP students may take up to 7 credits of academic course work at the undergraduate and graduate levels while still remaining enrolled full time in ALCP.

Education Abroad

The University of Idaho has the largest education abroad program in the state of Idaho and one of the most extensive programs in the U.S. With access to 350 universities in 65 countries, students in virtually any field can enhance their UI education. For example, students can study wildlife in South Africa, education in Sweden, ecology in Costa Rica, architecture in Italy, or business in China. Students can also study subjects not normally offered at UI. A student pursuing a computer science major might choose to study animation in England, a student interested in microbiology might study genome science in Australia, or a student undertaking a civil engineering major might choose to study ocean engineering in Scotland. Courses in many countries are taught in English so that students without foreign language skills are still able to study abroad. However, those students who are interested in learning a foreign language will find that there are also excellent opportunities for studying Spanish, French, German, Italian, Chinese, Japanese, Arabic, as well as other world languages.

Students participating on UI education abroad programs may also take advantage of exciting opportunities in international service learning, internships, volunteerism, research, and field work. For example, students studying in India might volunteer for a cooperative promoting women's rights, health, and standing in Indian society, students studying in Berlin might participate in an internship with Mercedes-Benz, and students in Peru might participate in a service-learning program caring for llamas and alpacas in an Agricultural Animal Care Center, preserving a historically vital piece of Peruvian culture.

Students who participate in UI education abroad programs do not pay UI tuition/fees (except students participating in UI exchanges or faculty/staff-led programs). Instead, they pay the program cost for

each semester/summer term they are abroad. Program costs vary, but in some cases an education abroad experience costs about the same amount as studying on campus. Students receiving federal or state financial aid and/or scholarships may be able to apply their entire award to UI education abroad programs. Students participating in semester/academic year education abroad programs are required to be full-time students unless special arrangements have been made.

Full-time UI students may also be eligible for an International Experience Grant (IEG) created through the Associated Students of the University of Idaho (ASUI). Approximately 157 of these grants are awarded to UI undergraduate education abroad participants each year. Many other education abroad scholarships are also available to UI students. Some education abroad programs, such as the University Studies Abroad Consortium (USAC), have established scholarship programs for UI, a number of UI departments and colleges also provide education abroad scholarships, and there are also many national education abroad scholarships available to UI students. Learn more about education abroad at http://www.uidaho.edu/academics/ipo/study-abroad

Students may receive credit for education abroad or other experience overseas in the following ways:

1. **Residency credit toward baccalaureate degree**. Students are registered under the study abroad course number. The "Course Planning Form" form must be completed before departure to ensure proper evaluation when the program is completed. Upon receipt of an official transcript, courses are evaluated and recorded as transfer credit. Credits earned through approved UI education abroad programs are included in the residency requirement for baccalaureate degrees.
2. **Transfer credit**. Students whose needs are not met by UI education abroad programs may petition to participate in a non-UI affiliated education abroad program. If the petition is approved, students must complete all other required Education Abroad forms, including a "Financial Aid Consortium/Contract Agreement" (signed by the education abroad institution and submitted to the International Programs Office before departure) for registration to be processed and financial aid to be disbursed. Students are registered under the non-UI education abroad course number. Upon receipt of an official transcript, courses are evaluated and recorded as transfer credit. Credits earned through non-UI education abroad programs are not included in the residency requirement for baccalaureate degrees.
3. **Directed study.** Students may petition to plan their own educational experiences abroad, and arrange *in advance* for credit from any appropriate department. This is for education comparable to that gained in other courses of that department, but it may be as general and inclusive as the department will allow. Students choosing this option must also fill-out all appropriate UI Education Abroad applications and mandatory forms.
4. **Course challenge**. Some courses may be challenged on the basis of knowledge gained abroad. See regulation I-2 (http://uidaho.smartcatalogiq.com/en/2017-2018/University-of-Idaho-General-Catalog/General-Requirements-and-Academic-Procedures/I-Alternative-Credit-Opportunities).
5. **Experiential learning**. Credit may be awarded to students for knowledge and/or competence gained in foreign travel. See regulation I-2 (http://uidaho.smartcatalogiq.com/en/2017-2018/University-of-Idaho-General-Catalog/General-Requirements-and-Academic-Procedures/I-Alternative-Credit-Opportunities). This option requires the submission of a portfolio demonstrating knowledge and competence.

Students who participate in UI education abroad programs do not pay UI tuition/fees (except students participating in UI faculty/staff-led programs). Instead, they pay the program cost for each semester/summer term they are abroad.

Students participating in semester/academic year education abroad programs are required to be full-time students unless special arrangements have been made.

Search Education Abroad programs options here (http://uidaho-sa.terradotta.com/index.cfm?FuseAction=Programs.SimpleSearch).

For more information on education abroad (study, intern, work, research, volunteer abroad), call, email, or visit the International Programs Office in LLC Building #3, Ground Floor (tel: 208-885-7870 email: abroad@uidaho.edu).

UI is affiliated to the following programs and uses these grading systems:

Education Abroad Program	Placement Sites	Duration	Grades	Reqd GPA
Accademia Italiana	Italy	Semester, year, summer	P/F	2.5
Al Akhawayn University	Morocco	Semester, year, summer	P/F	2.5
Chulalongkorn University	Thailand	Semester, year, summer	P/F	2.5
EcoLife Expeditions - North-West University	South Africa	Winter, summer	P/F	2.5
Harlaxton College-University of Evansville	England	Semester, year, summer	A-F	3
Helping Hands Health Education (Tribhuvan Univ)	Nepal	Semester, year, summer	A-F	2.5
Semester at Sea (Colorado State Univ)	Various	Semester, year, summer	A-F	2.75
Hochschule für Technik und Wirtschaft Berlin (HTW)	Germany	Semester, year	P/F	2.5
The Hague	Netherlands	Semester, year	P/F	2.5
KCP International Language Institute	Japan	Semester, year, summer	A-F	2.5
Lancaster University	England	Semester, year	P-F	2.75

Lincoln University	New Zealand	Semester, year	P-F	2.75
Nagasaki University of Foreign Studies	Japan	Semester, year	A-F	2.5
National Chiayi University	Taiwan	Semester, year	P/F	2.5
Regent's University London	England	Semester, year, summer	P/F	2.75
Royal Thimpu College	Bhutan	Semester, year	A-F	2.5
Ryukoku University	Japan	Semester, year	P/F	2.50
Southern Denmark University	Denmark	Semester, year	P/F	2.5
Tampere University of Technology	Finland	Semester, year	P/F	2.50
Universidad de Zaragoza	Spain	Semester, year	P/F	2.5
University College Dublin	Ireland	Semester, year, summer	P/F	3.0
University of Nottingham Ningbo	China	Semester, year, summer	P/F	2.50
University of the Sunshine Coast	Australia	Semester, year	P/F	2.5
Council on International Educational Exchange (CIEE)	66 institutions in 36 countries	Semester, year, summer	A-F	2.50-3.00
International Student Exchange Program (ISEP)	328 institutions in 54 countries	Semester, year, summer	P/F	2.75
International Studies Abroad (ISA)	Argentina, Australia, Brazil, Chile, China, Colombia, Costa Rica, Cuba, Czech Republic, Dominican Republic, England, Fiji, France, Germany, Greece, India, Ireland, Italy, Japan, Jordan, Morocco, Netherlands, New Zealand, Peru, Scotland, South Africa, South Korea, Spain, Thailand, Vietnam	Semester, year, summer	A-F	2.50-3.00
University Studies Abroad Consortium (USAC)	Australia, Brazil, Chile, China, Costa Rica, Cuba, Czech Republic, England, France, Germany, Ghana, India, Ireland, Israel, Italy, Japan, Korea, The Netherlands, New Zealand, Norway, Poland, Scotland, South Africa, Spain, Sweden, Thailand, Turkey, Uruguay	Semester, year, summer	A-F	2.50-3.00
Universidad Publica de Navarra	Spain	Semester, Year	P/F	

MUTUAL RESPONSIBILITY AGREEMENT

UI's acceptance of a student for admission and the student's enrollment in the university constitute an agreement of mutual responsibility. The student's part of this agreement is to accept established UI policies and rules, to respect the laws of governmental units, and to act responsibly and in a manner appropriate to these laws, policies, and rules. UI's part is to carry out its commitment to higher education, to fulfill its responsibilities in pursuit of the academic goals and objectives of all members of the university community, and to meet its obligation to provide an atmosphere in which students will have an opportunity to be heard in matters affecting their welfare as students. UI must take appropriate disciplinary action when it has been ascertained that a student's action is contrary to UI regulations and thus that this agreement has been violated.

GENERAL REQUIREMENTS AND ACADEMIC PROCEDURES

The following procedures and regulations have been adopted to help students, faculty members, and administrators carry out UI's overall academic program successfully. Students have the ultimate responsibility for meeting university, college, and departmental graduation requirements and academic procedures. Students, with the help of faculty advisors, should check their records each time they prepare to register to ensure that they are correctly and systematically fulfilling their degree requirements. It is the responsibility of advisors, major professors, and deans to assist students in understanding and complying with these requirements and procedures. The registrar assists by checking students' records for compliance with the regulations in this section of the catalog. Requests to waive curricular requirements, academic provisions, or academic standards should be presented to the appropriate department and/or college.

Rights Reserved to the University

Catalogs, bulletins, and course or fee schedules shall not be considered as binding contracts between the University of Idaho (UI) and students. The UI reserves the right at any time, without advance notice, to:

1. withdraw or cancel classes, courses, and programs;
2. change fee schedules;
3. change the academic calendar;
4. change admission and registration requirements;
5. change the regulations and requirements governing instruction in and graduation from the UI and its various divisions; and
6. change any other regulations affecting students.

Changes go into force whenever the proper authorities so determine and shall apply not only to prospective students but also to those who are matriculated at the time in the UI. When economic and other conditions permit, the UI tries to provide advance notice of such changes. In particular, when an instructional program is to be withdrawn, the UI will make every reasonable effort to ensure that students who are within two (2) years of completing graduation requirements, and who are making normal progress toward completion of those requirements, will have the opportunity to complete the program which is to be withdrawn.

The UI also reserves the right, when a student has failed to discharge any obligation to the UI, to deny that student the privilege of re-registering or to withhold the student's records or information based on the records. Students may verify the status of their accounts and be informed of any financial obligation to the UI by inquiring at the cashier's window in the Bruce Pitman Center.

Academic Appeals Process

Students may petition the appropriate committee for exceptions to the administrative and academic regulations of the University of Idaho. Petitions are submitted to one of the following committees depending on the nature of the petition.

Academic Petitions Committee

This committee hears student appeals for exceptions to the regulations in this catalog section including, but not limited to, such matters as

1. registration for courses after the deadline,
2. reinstatement from 3rd disqualification,
3. withdrawing from a course after the deadline, and
4. expunging a grade of W from an academic record. Should be presented to the Academic Petitions Committee on forms available in college offices. www.webpages.uidaho.edu/fsh/1640.html#1640.04

Appeals for reinstatement after second disqualification are directed to the college. If the college committee denies the appeal, the student may appeal to the provost or provost's designee.

Academic Hearing Board

This committee hears student appeals from decisions made by college authorities concerning, but not limited to, such matters as

1. eligibility for advanced placement or credit by examination,
2. objectivity or fairness in making, administering, and evaluating class assignments,
3. maintenance of standards for conscientious performance of teaching duties, and
4. scheduling of classes, field trips, and examinations.

The board does not hear appeals concerning requirements or regulations of the College of Graduate Studies or the College of Law. www.webpages.uidaho.edu/fsh/1640.html#1640.02

Administrative Hearing Board

Students submit appeals to the Administrative Hearing Board on administrative decisions in such matters as residence status for tuition purposes, granting of student financial aid, and assessment of fees or charges (except in connection with parking regulations), and disputes involving interpretation and application of policies concerning such matters as student records, smoking, and treatment of disabled persons. www.webpages.uidaho.edu/fsh/1640.html#1640.06

Appeals from decisions of the Academic Petitions Committee and the Academic Hearing Board are submitted to the provost. If the provost concurs with the body whose decisions was appealed, the appellant then may appeal to the president and regents if the president and regents consent to hear the appeal.

Decisions of the Administrative Hearing Board may be appealed to the president and regents when they consent to hear such appeals.

A - MATRICULATION

Applicants for enrollment in any course offered by UI for college credit, except correspondence study, submit personal data and credentials covering all previous academic work. (See "Undergraduate Admission to the University (p. 42)" or "Graduate Admission to the University (p. 42)") After UI has received these credentials and approved the application, registration access is given to the applicant and the applicant's first registration at UI concludes the matriculation process.

B - REGISTRATION

B-1. Registration Access

Registration access is given to new students as described in section A - Matriculation. It is also given to students who were previously enrolled within two years of the term in which they wish to register. Former students who have not been enrolled at UI within those two years must be re-admitted by the Undergraduate or Graduate Admissions Office at least one month prior to the term in which they wish to register. Such students will be required to submit transcripts from any institutions attended since their last registration at UI, and they may also be required to complete a residence questionnaire. Failure to meet the deadline may cause a delay in registration. Undergraduate students are required to meet with their academic advisor prior to registration.

B-2. Admission to Classes

Instructors do not admit anyone to class whose name does not appear on the class roster. UI instructors are given the authority to grant or deny access to classes by visitors.

B-3. Auditing Classes

Auditing a course consists of attendance without participation or credit. Audited courses will be recorded on a student's permanent record. The permission of the instructor is required before a student may audit a course. Seating preference in a course will be given to students who are completing the course for credit. (See C-2 and C-3 (p. 82) for deadlines).

B-4. Independent Study Courses

A student enrolled in the regular program is permitted to carry independent study courses for college credit only with the prior written approval of his or her academic dean. Credit for correspondence-study courses will not be accepted without such approval.

B-5. Registration for Courses Without Completion of Prerequisites

Students who have not completed the prerequisites to a course for which they are otherwise eligible may register for the course with the instructor's approval.

B-6. Registration of Lower-Division Students in Upper-Division Courses

All academic programs give priority in the first two years to meeting the general requirements for the appropriate degree and acquiring the foundation for advanced study; therefore, freshman students may not take upper-division courses. Exceptions may be made for students who have fulfilled the prerequisites and who are well prepared in their field of study. In such cases, the instructor may, with the concurrence of the student's advisor, authorize the exception.

B-7. Registration of Undergraduate and Non-degree Students in Graduate Courses

Undergraduate and non-degree students may register in graduate courses under the conditions outlined in the College of Graduate Studies section with the prior written approval of the instructor of the course, the student's advisor, and the Dean of the College of Graduate Studies.

B-8. Registration of Students with Baccalaureate Degrees as Undergraduates

To register as undergraduates, students with baccalaureate degrees must secure the permission of the dean of his or her undergraduate college and file a statement with the registrar indicating that they understand that the work will not be classified as graduate work and cannot be used toward a graduate degree at a later date. (See J-7-b (p. 91).)

B-9. Registration for Full Semester Courses

Students may register for full semester courses through the sixth day of the semester. A student may register for a course with instructor approval through the tenth day of the semester.

B-10. Registration for Accelerated and Other Short Courses

Students may register for accelerated and other short courses at any time up to and including the starting date of the course without petition.

B-11. Pass-Fail Option

B-11-a. Undergraduate Students

1. After consultation with their advisors, undergraduates who have a cumulative grade-point average of 2.00 or higher are permitted to enroll in one course a semester under this P/F option. (The grade-point requirement is not applicable to students who are taking university-level courses for the first time.) This procedure is separate from taking courses that are regularly graded P/F. Within the limitations specified above, an undergraduate may enroll under the pass-fail option in any course EXCEPT:
   a. courses listed by number and title in the student's major curriculum as printed in the individual department section;
   b. courses taken to meet the distributional requirements of the college or curriculum, unless allowed for P/F enrollment by the college in which the student is majoring;
   c. courses used to satisfy the general education requirements;
   d. courses in the major subject field; and
   e. courses in closely related fields that are excluded from this option by the student's department. (See B-11-d for "Reporting of Grades.")
2. Students in officer education programs (OEP) may enroll under this regulation in courses required because of their affiliation with the OEP ONLY with the permission of the administrator of the OEP department concerned.
3. A maximum of 12 credits earned in courses under this regulation may be counted toward a baccalaureate degree.

B-11-b. Graduate Students

1. With the approval of the major professor concerned (or advisor in the case of an unclassified student) and the dean of the College of Graduate Studies, graduate students may enroll in a limited number of courses under this P/F option. This procedure is separate from taking courses that are regularly graded P/F.

2. Courses that may be taken by graduate students under this regulation are:
   a. any course not in the student's designated major and
   b. any course required to remove a deficiency or to provide background for the student's program, unless the major department stipulates that such deficiency courses must be taken on a regular-grade basis and completed with an A or B.
3. Of the minimum number of credits required for a degree, no more than three credits in a master's or specialist program or nine in a doctoral program may be taken under this P/F option.
4. To have P recorded for courses taken under this regulation, a graduate student must earn a C or above. A grade of D will be converted to an F on the student's records.
5. An unclassified student may enroll for courses under this option with the approval of his or her advisor (if assigned) and the dean of the College of Graduate Studies. If, however, at a later date an unclassified student is admitted to a degree program, the above regulations apply and no changes to regular letter grades will be permitted.

B-11-c. Adds, Drops, and Changes

Students may add or drop a P/F option course in the same manner as a regular course, and they may change from P/F to regular-grade classification, or vice versa, if they do so no later than the deadlines stated in regulation C and the academic calendar. Students may make these changes by securing the signatures of the advisor or major professor and dean concerned.

B-11-d. Reporting of Grades

Instructors are not notified as to which students are enrolled in courses under this P/F option. Grades are reported in the same manner as grades in courses taken on a regular-grade basis. The registrar is responsible for converting Cs or above to Ps on students' records and, for graduates, Ds to Fs. Grades of D reported for undergraduates are recorded on students' records and are not converted.

B-12. Registration in Joint-Listed Courses

A student who enrolls in a joint-listed course may only earn credit at the level the student initially completes the course. A student who enrolls in the same joint-listed course at a different level will not receive credit on his or her transcript.

C - CHANGES IN REGISTRATION

C-1. Adding a Course

A student may add a full semester course online through the sixth day of the semester. A student may add a course with instructor approval through the tenth day of the semester. These periods are prorated for accelerated or short courses.

C-2. Dropping a Course

A student may drop a full semester course through the tenth day of the semester without a grade of W. This period is prorated for accelerated or short courses. Students may not drop a course by simply staying out of class.

C-3. Withdrawing from a Course

Beginning with the eleventh day of the semester and ending with the tenth week of the semester a student may withdraw from a course. During this period a grade of W will be recorded on the student's record and will count against their 21 credit withdrawal limit (see regulation C-4). This period is prorated for accelerated or short courses. A student may not withdraw from a course after a final grade has been assigned for that course, even if this occurs before the deadline to withdraw from the course.

C-4. Credit Withdrawal Limitation

The number of credits that a student may withdraw from during his or her undergraduate career at UI is limited to 21 credits. If a student attempts to drop a course(s) that would bring the total credits he or she will have withdrawn from above 21, the student will not be allowed to do so. When a student withdraws from the university the credits in the courses for the semester do not count against the withdrawal credit limitation (see regulation G (p. 87)).

D - CREDIT AND CONTINUING EDUCATION UNIT

D-1. Unit of Credit Defined

A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out-of class student work each week for approximately fifteen weeks for one semester or the equivalent amount of work over a different amount of time; or
2. At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities, including laboratory work, internships, practica, studio work, short courses, workshops and other academic work leading to the award of credit hours.

D-2. Credit-Load Limitations

(Also see J-5 (p. 91).)

D-2-a. Fall and Spring Semesters, and Summer Session

1. During the Fall and Spring, an undergraduate student may register for no more than 20 credits in a semester. This number may be increased to 22 with specific written approval by his or her academic dean. Registration for more than 22 credits (except for students enrolled in the WWAMI Medical Education Program) is permitted only on approval of a petition to the Academic Petitions Committee (petition forms are available in deans' offices). During the Summer Session, an undergraduate student may register for no more than 18 credits. A law student may register for no more than 18 credits in a semester without approval of the Associate Dean in the College of Law. See the College of Graduate Studies section for the credit limitation for a graduate student.
2. Registration for courses with conflicting or overlapping meeting times is allowed only with the approval of the instructor of each affected course.

D-2-b. Full-Time Employees

A full-time UI employee may register for no more than six credits in a semester or three credits during the Summer Session. Written approval by the employee's departmental administrator and dean or director must accompany the registration form.

D-2-c. Non-degree Students

A non-degree students may register for no more than 7 credits each semester and may complete a maximum of 32 semester credits. Students on official UI exchange programs are not limited to 7 credits each semester. International exchange students must take 12 or more credits. Upon completion of 32 semester credits, the student must either be admitted as a degree-seeking student at UI or submit a letter of appeal to continue as a non-degree student.

D-2-d. Dual Credit Students

Under Idaho State law, eligible high school students are given the opportunity to enroll in University of Idaho undergraduate courses and receive both college credit and credit towards high school graduation while still enrolled in high school. The number of credits for which a dual credit student may register in a given semester is determined by the high school counselor who must sign the enrollment form. However, the credit load limitations that apply to undergraduate students also apply to dual credit students.

D-3. Transfer Credit

Credit is accepted for work completed in accredited institutions of higher education as provided in the regulations covering the admission of transfer students. (See "Transfer Admission Requirements (p. 42)"; also see E-4 (p. 84) and J-5 (p. 91).)

D-4. Review and Prerequisite Courses

Students will not receive credit for courses taken in review or for courses that are prerequisites of courses they have already completed in the same subject area. Exceptions:

1. As stated in I-1,
2. Students who transfer in a course for which the UI requires BIOL 114 or BIOL 115 (but who have not yet taken BIOL 114 or BIOL 115), may take BIOL 114 and BIOL 115 for credit.

D-5. Continuing Education Unit

Short learning activities may also be evaluated by a system of uniform continuing education units. Such units are granted in accordance with the following guidelines, which are set forth by the (national) Task Force on the Continuing Unit: A continuing education unit is expected to require 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instructors. Continuing education, as used in this definition, includes all instructional and organizational learning experiences in organized formats that impart noncredit education to post-secondary-level learners. These properties of continuing education may be applied equally under the system regardless of the teaching-learning format, program duration, source of sponsorship, subject matter, level, audience, or purpose. The number of units to be awarded is determined by considering the number of contact hours of instruction, or the equivalent, included in the educational activity. Reasonable allowance may be made for activities such as required reports, lab assignments, field trips, and supervised study. A student may not receive academic credit and continuing education units for the same learning activity.

D-6. Professional Development Credit

Professional development credit may be offered to improve effectiveness of teachers and administrators in raising student achievement. Courses must include a minimum of 15 contact hours per credit. Credits earned in professional development courses may not be applied toward a baccalaureate degree.

E - GRADES

E-1. Grading System

E-1-a

For purposes of reporting and record, academic work is graded as follows: A-superior; B-above average; C-average; D-below average; F-failure; I-incomplete work of passing quality (see regulation F); W-withdrawal; WA-withdrawal to audit; WU-withdrawal from the university; P-pass (see below); IP-in progress (see E-2); N-unsatisfactory and must be repeated (used only in ENGL 101 and ENGL 102); S-satisfactory (used only in CEU courses); CR-Credit, and NC-No Credit (may be used only in professional development courses).

E-1-b

Grades of P may be reported at the option of the department on a course-by-course basis in noncompetitive courses such as practicum, internship, seminar, and directed study. Grades of P are also reported in courses carrying the statement, "Graded P/F," in the course description. In courses in which Ps are to be used, the method of grading will be made known to the students at the beginning of the semester, and the grading system will be uniform for all students in the courses. Grades under the pass-fail option are not affected by this regulation because the conversion of the regular letter grade is made by the registrar after instructors turn in the class rosters.

E-1-c

Midsemester grades in undergraduate courses must also conform to the above regulations. It is permissible to report Ps at midsemester ONLY in courses that have been approved for grading on this basis.

E-2. In-Progress (IP) Grades.

E-2-a. Grades in Undergraduate Senior Thesis or Senior Project

The grade of IP (in progress) may be used to indicate at least minimally satisfactory progress in undergraduate courses such as senior thesis or senior project that have the statement "May be graded IP" in the course description. When the thesis or project is accepted, the IP grades are to be removed (see E-2-c). Grades of IP in undergraduate courses are considered to represent grades of at least C or P. If, in any given semester, the instructor considers the student's progress unsatisfactory, an appropriate letter grade (D or F) should be assigned for that semester.

E-2-b. Grades in Graduate Research Courses

The grade of IP (in progress) may be used in courses 500 (Master's Research and Thesis), 599 (Non-thesis Master's Research), and 600 (Doctoral Research and Dissertation). When the thesis, dissertation, or other research document is accepted, or when a student ceases to work under the faculty member who is supervising his or her research, the IP grades are to be removed (see below). Grades of IP in graduate courses are considered to represent at least grades of B or P. If, in any given semester, the faculty member supervising the student's research considers the student's progress unsatisfactory, a regular letter grade (C, D, or F) should be assigned.

E-2-c. Removal of IP Grades

Departments may use on a department-wide basis either the P/F grading system, or regular letter grades, as well as P, when removing the previously assigned IP grades (e.g., a student who enrolled for six credits in course 500 one semester, four credits another semester, and five credits an additional semester could have 15 credits of IP grades removed with different grades for each of the blocks of credit registered for each semester, such as six credits of A, four credits of B, and five credits of P).

E-3. Grades in Law Courses

For additional provisions applicable to grades in law courses, see the College of Law (p. 241) section.

E-4. Computing Grade-Point Averages

Grades are converted by assigning the following number of points per credit for each grade: A-4, B-3, C-2, D-1, F-0. In computing the grade-point average, neither credits attempted nor grade points earned are considered for the following: courses graded I, IP, P, S, W, WU, N, CR, NC, correspondence courses, continuing education units, credits earned under regulation I, or courses taken at another institution. Credit earned at non-U.S. institutions is recorded as pass (P) or fail (F), except for some courses taken through an approved study abroad program.

The UI considers only the *Institutional* grade-point average official. Although both institutional and overall grade-point averages are printed on transcripts, the overall grade-point average (which includes transfer courses) is informational only. To calculate a grade-point average divide the *Quality Points* (course credits times the points assigned for the grade earned) by the *GPA Hours* (course credits attempted *not* including grades of I, IP, P, W, WU, or N). *Earned Hours* indicate the total number of semester credits successfully completed (course grades of A, B, C, D, or P earned). Grades of P are included in *Earned Hours* but do not earn any quality points; grades of F are included in *GPA Hours*, but not in *Earned Hours*.

E-5. Replacing Grades

E-5-a

Some courses are listed in this catalog as "repeatable" (i.e., the credits listed for the courses show a maximum number of credits that may be earned or show "cr arr" or "max arr" indicating that the courses may be repeated for credit without restriction as to maximum). Other courses show one credit entry for the course (e.g., "1 cr," "2 cr," etc.) and may be taken only once for credit (see procedure for repeating to replace a grade below). [See the section entitled "Credit Designations (p. 380)" for more information.]

E-5-b. Replacing a Grade by Repeating a Course

A student who has received a D or F in a course at UI may repeat the course at the UI provided credit has not been earned in a more advanced vertically related course in the same subject area. Although all grades remain on the record, the first repeat will replace the grade and credit earned initially in the course. The second and subsequent repeats of the same course will be averaged in the student's institutional GPA. See the College of Law (p. 241) section for the exception to this regulation applicable to students in that college.

E-6. Reports of Grades and Grade Corrections

Grades are reported to the registrar for all courses at the end of each academic session and at mid semester for undergraduate courses (see deadlines in the academic calendar (p. 11)). The assignment of grades and corrections of grades are the sole prerogative of the instructor and are reported by the instructor directly to the Registrar's Office via the UI Faculty Web. All grades except I and IP (see regulation F (p. 86) and E-2) are considered final when assigned by an instructor at the end of a term. An instructor may request a grade correction when a computational or procedural error occurred in the original assignment of a grade. No final grade may be revised as a result of re-examination or the submission of additional work after the close of the semester. Grade corrections must be processed within one year of the end of the term for which the original grade was assigned. In the event the instructor leaves the university, the departmental administrator may assign the final grade.

F - GRADES OF INCOMPLETE

F-1

A grade of "Incomplete" is assigned only when the student has been in attendance and has done passing work up to a time within three weeks of the close of the semester, or within one week of the close of the summer session. It may be assigned only upon agreement of the student and course instructor when extenuating circumstances make it impossible for the student to complete course requirements on time (Extenuating circumstances include serious illness, car accidents, death of a family member, etc. It does not include lateness due to procrastination, the student's desire to do extra work to raise his/her grade, allowing a student to retake the course, etc.). Graduate students on probation, see College of Graduate Studies section on Probation, Disqualification, and Reinstatement. If a grade of "Incomplete" is submitted, the instructor will assign a reversion grade in the event the missing work is not completed. The instructor must also specify to the student the conditions and requirements for completing the deficient work.

F-2. Completion of "Incomplete" Grades

Final grades for incompletes received in the Fall semester or Intersession, must be assigned by the last day of the following Summer semester. Final grades for incompletes received in the Spring semester or Summer Session, must be assigned by the last day of the following Fall semester. When a student has completed the deficient work, the instructor will assign a final grade. An incomplete that is not completed within the time limit specified above would automatically be changed to the reversion grade assigned by the instructor at the time the incomplete was submitted. Instructors may assign a final grade anytime within the time period specified above. In the event the instructor leaves the university, the departmental administrator may assign the final grade. An incomplete remains on the student's permanent record and is accompanied by the final grade (i.e. I/A, I/B, I/C).

F-3. "Incomplete" Grades on Record at End of Final Term

A student cannot graduate with a grade of "Incomplete" on his or her record. At the end of the term in which the student will graduate, a grade of "Incomplete" in any UI course on that degree level (undergraduate, graduate, law, etc.) reverts to the grade that the instructor had specified on the on-line grade roster (see F-1). Reverted grades are included in the computation of the student's cumulative grade-point average at graduation.

G - WITHDRAWAL PROCEDURES

G-1. Standard Withdrawal Procedures

G-1-a

A student may withdraw from the semester before the end of the second week following midterms. See regulation G-1-b for withdrawal from the semester after the end of the second week following midterms.

G-1-b

A student is permitted to withdraw from the semester after the end of the second week following midterms for compelling reasons only and after approval by the Academic Petitions Committee *or* after completing a medical withdrawal as explained in G-2. Examples of compelling reasons are: serious illness or injury of the student or death or serious illness or injury in the student's immediate family. Petitions for permission to withdraw after the end of the second week following midterms are forwarded *via the student's academic dean* to the Academic Petitions Committee on forms available in department and college offices. If the student's petition is approved, the Academic Petitions Committee will determine the effective date of the withdrawal. (See "Refund of Fees (p. 62)")

G-2. Medical Withdrawal Procedures

G-2-a

The medical director of the Student Health Service, University Psychiatrist, the director of the Counseling and Testing Center, or the Dean of Students is authorized to grant or require a student's withdrawal from the semester for medical reasons.

G-2-b. Voluntary Medical Withdrawal

Students desiring to withdraw from the semester for medical reasons will consult the medical director of the Student Health Service, University Psychiatrist, the director of the Counseling and Testing Center, or the Dean of Students who will evaluate the request. If granted, the dean of students will be notified in writing to process the medical withdrawal.

G-2-c. Emergency Transfer to Institutional Care

The medical director of the Student Health Service or University Psychiatrist is authorized to act as the representative of the president in emergencies that, under Idaho laws, require the transfer of a student to a community or state health facility. The student may be granted a medical withdrawal from the semester at the discretion of either director.

G-2-d. Mandatory Medical Withdrawal

It is the responsibility of the Dean of Students to order a medical examination of a student if the dean has reason to believe that the student has a serious medical or psychiatric condition that substantially threatens or interferes with the welfare of the student, other members of the university community, or the educational processes of the university. The dean notifies the student and the director of the Student Health Service that such an evaluation is to be conducted. This process may be started by the director of the Student Health Service, University Psychiatrist or the director of the Counseling and Testing Center for patients under care or counseling by notifying the student and the dean of students in writing.

1. **Request for Evaluation.** On notification from the dean of students, the medical director of the Student Health Service requests the student to undergo immediate professional evaluation by the medical director or the medical director's designee, or, at the student's request and expense, by a private physician or psychiatrist deemed appropriate by the medical director. A report of this evaluation is presented to the medical director with a specific recommendation as to whether a medical withdrawal is warranted.
2. **Evaluation Conference**. The medical director of the Student Health Service provides the student written notice of a time and place at which the medical director and student will confer on the final determination as to mandatory withdrawal. The student may have the assistance of a representative at this conference. The medical director refers to reports, recommendations, and evaluations pertinent to the case and is empowered to request additional relevant medical or psychiatric examinations of the student.
3. **Determination of Director**. Based on the evaluation and the conference, the medical director of the Student Health Service may determine:
   a. that mandatory withdrawal is warranted by the student's medical or psychiatric condition;
   b. that mandatory withdrawal is not warranted by the student's medical or psychiatric condition; or
   c. that the student may remain enrolled subject to conditions specified by the medical director.
   The medical director transmits this decision in writing to the student and the dean of students. If withdrawal is ordered, the dean will process it.
4. **Finality of Determination**. Decisions made by the medical director of the Student Health Service pursuant to these procedures are final.
5. **Refusal of Evaluation**. If, after a request by the medical director of the Student Health Service, the student refuses to consult with a physician or psychiatrist, the director will, if practicable, seek the help of the student's family in persuading the student to seek appropriate professional assistance. Should these efforts not result in the student taking the desired action, the director summarizes the steps taken to secure needed information and the reasons for the withdrawal and instruct the dean of students to process the withdrawal. A copy of this order for withdrawal is sent to the student. The dean will process the withdrawal as mandatory, but involuntary.
6. **Appeal**. A student may appeal to the Vice Provost for Academic Initiatives either
   a. to revoke the order of the dean of students for a medical examination or
   b. in case a procedural error is alleged, to order the determination of the medical director of the Student Health Service reopened.

G-2-e

Any student placed on medical withdrawal may, if appropriate, be informed, in writing, by the medical director of the Student Health Service, University Psychiatrist or the director of the Counseling and Testing Center that he or she is eligible to return to UI at a later date on the favorable recommendation of one of the above. When applying for readmission, the student is responsible for providing one of the above with evidence of satisfactory treatment of the condition that necessitated medical withdrawal.

G-3. Grades for Students Who Withdraw

A student who withdraws from, or leaves, UI without official approval will receive Fs in all courses in which he or she is registered and for which the grade has not already been assigned.

H - FINAL EXAMINATIONS

H-1

The last five days of each semester are scheduled as a final exam week (two-hour exams) in all divisions except the College of Law. The following provisions apply:

H-1-a

No quizzes or exams may be given in lecture-recitation periods during the week before finals week. Exams in lab periods and in physical education activity classes, final in-class essays in English composition classes, and final oral presentations in speech classes are permitted.

H-1-b

Final exams or final class sessions are to be held in accordance with the schedule approved by the Faculty Council. Instructors may deviate from the schedule only on the recommendation of the college dean and prior approval by the provost or provost's designee.

H-1-c

The final exam time will be scheduled based on the lecture portion of a course. The final exam time is based on the meeting schedule of the course section, as it exists in the class schedule for that semester. If a class meets Monday, Wednesday, and Friday, for example, the final exam time will be based on the time the class is scheduled to meet on these days. If the meeting day(s) and/or time of the lecture portion of a course change during the semester the final exam time will be scheduled based on the first meeting time.

H-1-d

Where exams common to more than one course or section are required, they must be scheduled through the Registrar's Office and are regularly held in the evening.

H-1-e

Students with more than two finals in one day may have the excess final(s) rescheduled. Students who need to have a final rescheduled should make arrangements as early in the semester as possible, but no later than two weeks prior to the start of final examination week. Requests submitted after the deadline are left to the discretion of the instructors. If voluntary accommodation is not achieved, the instructor of the class with the lowest enrollment will offer an alternative exam. The rescheduled exam will take place during one of the designated conflict exam periods or as arranged with the course instructor.

H-1-f

Athletic contests are not to be scheduled during finals week.

H-2

Students who miss final exams without valid reason receive Fs in the exams. Students who are unavoidably absent from final exams are required to present evidence in writing to the instructor to prove that the absence is/was unavoidable.

H-3

Instructors, with the concurrence of their departments, may excuse individual students from final exams when such students have a grade average in the course that will not be affected by the outcome of the final exam. In such instances, the grade earned before the final exam is to be assigned as the final grade.

H-4

Early final exams are permitted for students, on an individual basis, who clearly demonstrate in writing that the reasons for early final exams are compelling. Such requests require approval by the department and instructor of the course.

I - ALTERNATIVE CREDIT OPPORTUNITIES

I - Alternative Credit Opportunities

Students have the opportunity to earn undergraduate academic credit through Advanced Placement Examinations (AP), College Level Examination Program (CLEP), International Baccalaureate (IB), General Certificate of Education Examinations (A-Level), Global Assessment Certificate Examinations (GAC); DANTES Subject Standardized Tests (DSST); credit by examination, portfolio, technical competence, vertical course credit; and military courses. (See regulation J-5-a for credit limitations.)

Minimum scores needed to earn credit for AP, CLEP, IB, A-Level, or GAC examinations are available on the Registrar's website, www.uidaho.edu/registrar

I-2. Credit opportunities while an undergraduate degree-seeking student at UI

I-2-a. Challenged Courses (Credit by Examination)

Students may challenge UI lecture and associated laboratory courses (earn credit by examination) as follows:

1. Students must receive permission from the course instructor, from the administrator of the department in which the course is offered, and from his/her academic dean to challenge a course. Applications to challenge a course are available on the Registrar's Website. The application must be signed and the application fee paid to the Student Accounts/Cashiers Office (see Special Fees (p. 62) for extramural credits). The form is then returned to the Registrar's Office. The registrar checks the student's record to confirm if the student is eligible to challenge the course and notifies the instructor or student accordingly.
2. Students must score C or higher to pass and obtain credit. A passing grade is entered as P and is not included in grade-point computations. The student's account will be charged the appropriate per-credit fee at the time the credits are recorded on the student's transcript (see Special Fees (p. 62) for extramural credits). If a student does not meet these standards, no entry is made on their record and no per-credit fee is charged to their account.
3. Results of the challenged courses must be forwarded to the registrar no later than the beginning of the last week of the semester.
4. No examinations under this regulation may be conducted during the last two weeks of any academic session.
5. Students are not permitted to challenge a prerequisite course after having completed the advanced course.

I-2-b. Experiential Learning Portfolio

With the approval of an ad hoc committee consisting of representatives from the colleges and departments involved , an undergraduate may be awarded credit in a specific undergraduate-level course in recognition of university-level knowledge or competence acquired from work experiences, community and volunteer extension courses, and participation in informal courses and in-service training sponsored by associations, business, government, and industry. Requests for such credit must be approved by the student's departmental administrator and academic dean, and must be supported by such evidence as is needed to provide a sound basis for evaluating the student's achievements. Credits granted under this regulation are assigned a grade of P. Credit will be awarded at the undergraduate level based on demonstrated learning outcomes within the subject, course, or programs offered by the University. Forms for experiential learning portfolio credit are available on the Registrar's website, www.uidaho.edu/registrar.

I-2-c. Technical Competency Credit

Technical competency credits may be gained from experience in areas of concentration related to bachelor's degrees in professional-technical education or industrial technology. Grades of P for the successful completion of IndT 407, are normally recorded on a student's transcript during their last semester or upon completion of all degree requirements. A maximum of 30 credits may be earned in IndT 407. Applications and instructions for technical competency credits are available at the Department of Curriculum and Instruction. See Special Fees (p. 62) for extramural credits.

I-2-d. Vertically Related Course Credit

Undergraduate degree-seeking students may bypass an elementary course and enroll in a higher vertically related course. Students with a C or better in the advanced course are eligible to receive credit and a grade of P for the lower vertically related courses in the same subject matter. Vertically related courses are listed at the beginning of each subject in the course descriptions section. Applications to receive credit for vertically related courses are available on the Registrar's website, www.uidaho.edu/registrar. See Special Fees (p. 62) for extramural credits. *Advisors should make sure that students are aware of this opportunity for obtaining credit.*

I-2-e. Military Courses

Student who have served in the armed forces may receive credit based upon completed military courses recorded on their official Joint Services Transcript (JST). Evaluations for the granting of credit for military courses are based on the recommendations in the American Council of Education (ACE) guide.

I-3

Students who have completed courses at other institutions after bypassing lower vertically related courses, but have not been awarded credit for those bypassed courses, may receive credit for vertically related course(s) by following I-2-d.

J - GENERAL REQUIREMENTS FOR BACCALAUREATE DEGREES

Candidates for baccalaureate degrees must fulfill the following requirements. (See the College of Graduate Studies (p. 232) section for the requirements for graduate degrees. See the College of Law (p. 241) section for the requirements for the degree of Juris Doctor.)

J-1. Credit Requirements

J-1-a

Students must have earned a minimum of 120 credits to be granted a baccalaureate degree from the University of Idaho. Some programs require a higher minimum. For the minimum number of credits required in each degree program, see the major curricula of the various degree-granting units in the individual departmental section.

J-1-b

A minimum of 40 credits in upper-division courses (numbered 300 or above) is required for a baccalaureate degree.

J-2. Residency Requirements

A student must earn a minimum of 30 upper-division credits in UI courses. No credits awarded for alternative credit opportunities (see regulation I (p. 90)) or independent study can be counted among these 30 UI credits. Study abroad and student exchange credits may be counted toward this requirement with prior approval by the student's academic department and dean.

J-3. General Education Curriculum and Learning Outcomes

First-year students (see Admissions Status) are to complete the University of Idaho General Education curriculum. A university education is a preparation both for living and for making a living. It offers an opportunity not only to lay the foundations of a career, but also to develop the mind to its highest potential, to cultivate the imagination as well as the power to reason, and to gain the intellectual curiosity that makes education a life-long enterprise. See the University Learning Outcomes (p. 22) for more information.

A student working toward a baccalaureate degree must complete the necessary course work in the seven categories described below (J-3-a through J-3-g). This requirement is to be satisfied by earning a total of 36 credits and meeting the minimum number of credits specified for each category. Within the J-3-e, J-3-f, J-3-g categories, students must complete a total of 18 credits. (Transfer students have two options for fulfilling this requirement; these are described under "General Education Requirements for Transfer Students (p. 42)" in the Undergraduate Admission section of this catalog). University of Idaho general education courses accepted as transferable as general education courses to other Idaho state-funded institutions are listed as General Education Matriculated - (GEM) courses in the General Catalog. Courses that fulfill requirements in each category are reviewed each year and the list is updated in the Spring. Students and advisors are encouraged to check the list when it is published in the Spring to be aware of any additional courses that have been added to meet specific requirements. Courses that are approved to satisfy a general education requirement can be used to satisfy those requirements even if the course is completed prior to being approved as a general education course.

Note: Remedial courses may not be used to satisfy any of this requirement. Degree-seeking students must be enrolled in ENGL 109*,* ENGL 101*, or* ENGL 102 *in their first semester in residence and in each subsequent semester until they have passed* ENGL 102*. They must also be enrolled in* MATH 108 *or in a course that meets the general education requirement in mathematics, statistics, or computer science in their first year in residence and in each subsequent semester until the general education requirement in mathematics, statistics, or computer science has been satisfied.*

J-3-a. Written Communication (3-6 cr, depending on placement)

The purpose of this requirement is to develop the ability to organize one's thoughts, to express them simply and clearly through oral, written and visual means, to observe the standards and conventions of language usage, and to suit tone to audience. The requirement is proficiency in written English equal to that needed for the completion of ENGL 102.

To fulfill this requirement, students must complete ENGL 101 and ENGL 102 or attain satisfactory scores for both courses. The following specific provisions apply to the English composition component:

1. Based on placement, a student may be required to take up to 6 credits to satisfy this requirement. Students are provisionally placed in a required English composition course based on their SAT Verbal and/or ACT English scores. The University of Idaho offers an additional placement tool, the Write Class UIdaho: www.writeclassuidaho.com (http://www.writeclassuidaho.com)
2. Students who attain a satisfactory score on the College Board English Achievement or Scholastic Aptitude (Verbal) Test or the American College Testing (ACT) English Test will be awarded credit and grades of P for ENGL 101 and ENGL 102. Also, students who attain a score of 4 on the Advanced Placement Test in English will be awarded credit and a grade of P for ENGL 101 and students who attain a score of 5 on the Advanced Placement Test in English will be awarded credit and grades of P for ENGL 101 and ENGL 102.
3. UI accepts credits earned in comparable writing courses taken at other accredited institutions. (See credit limitation in J-5-d.)

J-3-b. Oral Communication (2-3 cr)

Students who receive a passing grade in one of the following five courses are expected to meet the proficiencies for Oral Communication courses contained in Section III-N of the Idaho State Board of Education Governing Policies and Procedures. Students should be able to demonstrate basic competency in

1. organization and preparation,
2. oral language use and presentation, and
3. addressing audience needs and interests.

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
COMM 150	Online Oral Communication	3
ENGL 313	Business Writing	3
ENGL 317	Technical Writing	3
PHIL 102	Reason and Rhetoric	2

J-3-c. Scientific Ways of Knowing (8 cr , from two different disciplines, which include two accompanying labs OR 7 cr which includes a Core Science (CORS) course and one course with lab)

The purpose of this requirement is to develop a better understanding of the physical and biological world by learning some of the principles that explain the natural phenomena of the universe, the experimental method used to derive those principles, and their applications.

Study in this area is undertaken as part of the general education requirements in order to promote scientific literacy, that is, the ability to read and understand the science issues being debated in society. Scientific literacy is essential if citizens are to make informed judgments on the wide range of issues that affect their everyday lives. Students receiving passing grades in the natural and applied science courses of the general education curriculum will demonstrate competency in the following areas:

1. knowledge of scientific principles;
2. the ability to write clearly and concisely using the style appropriate to the sciences;
3. the ability to interpret scientific data;
4. the ability to analyze experimental design critically; and
5. the development of laboratory skills.

Code	Title	Hours
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	4
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 154 & BIOL 155	Introductory Microbiology and Introductory Microbiology Laboratory	4
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	5
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	4
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CORS 205-297		3
ENVS 101 & ENVS 102	Introduction to Environmental Science and Field Activities in Environmental Sciences	4
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	4
GEOG 100 & 100L	Physical Geography and Physical Geography Lab	4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	4
GEOL 102 & 102L	Historical Geology and Historical Geology Lab	4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	4
PHYS 103 & PHYS 104	General Astronomy and Astronomy Lab	4
PHYS 111 & 111L	General Physics I and General Physics I Lab	4
PHYS 112 & 112L	General Physics II and General Physics II Lab	4
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	4
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	4

J-3-d. Mathematical Ways of Knowing (3 cr)

These courses develop analytical, quantitative, and problem solving skills by involving students in doing mathematics, statistics, or computer science and by focusing on understanding the concepts of these disciplines.

Students receiving passing grades in mathematics, statistics, or computer science will have the ability to recognize, analyze, and solve problems.

Code	Title	Hours
CS 112	Computational Thinking and Problem Solving	3
MATH 123	Math in Modern Society	3
MATH 130	Finite Mathematics	3
MATH 137	Algebra with Applications	3
MATH 143	College Algebra	3
MATH 160	Survey of Calculus	4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
STAT 251	Statistical Methods	3

J-3-e. Humanistic and Artistic Ways of Knowing (6 cr, from two different disciplines) and Social and Behavioral Ways of Knowing (6 cr, from two different disciplines)

The purpose of these liberal arts courses is to provide students with critical tools for understanding the human experience and providing the means for students to respond to the world around them.

Humanistic and Artistic Ways of Knowing courses enable students to reflect upon their lives and ask fundamental questions of value, purpose, and meaning in a rigorous and systematic interpretative manner, with the goal of fostering understanding of culture and inspiring a citizenry that is more literate, respectful of diverse viewpoints, and intellectually inquisitive.

Social and Behavioral Ways of Knowing courses enable students to apply rigorous analytic skills for the purpose of explaining the dynamic interaction among history, institutions, society and ideas that shape the behaviors of individuals, communities and societies. With these skills students can critically address the social issues of our contemporary world.

Some courses on the humanities and social science lists may also satisfy the American diversity or international requirement.

Approved Humanistic and Artistic Ways of Knowing Courses:

Code	Title	Hours
AMST 301	Studies in American Culture	3
ARCH 151	Introduction to the Built Environment	3
ART 100	World Art and Culture	3
ART 205	Visual Culture	3
ART 213	History and Theory of Modern Design	3
ART 302	Modern Art and Theory	3
ART 382	History of Photography	3
ART 407	New Media	3
DAN 100	Dance in Society	3
ENGL 175	Literature and Ideas	3
ENGL 221	History of Film 1895-1945	3
ENGL 222	History of Film 1945-Present	3
ENGL 257	Survey of Western World Literature I	3
ENGL 258	Survey of Western World Literature II	3
ENGL 267	Survey of British Literature I	3
ENGL 268	Survey of British Literature II	3
ENGL 277	Survey of American Literature I	3
ENGL 278	Survey of American Literature II	3
ENGL 322	Studies in Environmental Literature and Culture	3
ENGL 345	Studies in Shakespeare	3
ENGL 375	The Bible as Literature	3
FLEN 210	Introduction to Classic Mythology	3
FLEN 313	French/Francophone Literature in Translation	3
FLEN 324	Topics in German Literature in Translation	3
FLEN 331	Japanese Anime	3
FLEN 391	Hispanic Film	3
FLEN 394	Latin American Literature in Translation	3
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
HIST 350	The Age of Enlightenment: European Culture & Ideas, 1680-1800	3
HIST 357	Women in Pre-Modern European History	3
HIST 366	Modern European Cultural and Intellectual History, 1880-1980	3
HIST 378	History of Science I: Antiquity to 1700	3
HIST 379	History of Science II: 1700-Present	3
HIST 414	History and Film	3
HIST 442	The Medieval Church: Europe in the Early and High Middle Ages	3
HIST 443	The Medieval State: Europe in the High and Late Middle Ages	3
HIST 445	Medieval English Constitutional and Legal History: 1066-1485	3
HIST 447	The Renaissance	3
HIST 448	The Reformation	3
HIST 485	Chinese Social and Cultural History	3
IS 370	African Community, Culture, and Music	1-3
MUSH 111	Introduction to Music Literature	3
MUSH 201	History of Rock and Roll	3
MUSI 100	Introduction to Music	3
PHIL 103	Introduction to Ethics	3
PHIL 200	Philosophy of Alcohol	3
PHIL 201	Critical Thinking	3
PHIL 208	Business Ethics	3
PHIL 240	Belief and Reality	3
PHIL 351	Philosophy of Science	3
PHIL 361	Professional Ethics	3
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
THE 101	Introduction to the Theatre	3
THE 468	Theatre History	3
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	3

Approved Social and Behavioral Ways of Knowing Courses:

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
ANTH 101	Biological Anthropology	3
ANTH 102	Cultural Anthropology	3
ANTH 261	Language and Culture	3
ANTH 329	North American Indians	3
ANTH 350	Food, Culture, and Society	3
ANTH 462	Human Issues in International Development	3
COMM 233	Interpersonal Communication	3
COMM 335	Intercultural Communication	3
COMM 410	Conflict Management	3
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
ECON 272	Foundations of Economic Analysis	4
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
FLEN 270	Introduction to Greek and Roman Civilization	3
FLEN 307	Institutions of the European Union	3
FOR 235	Society and Natural Resources	3
GEOG 165	Human Geography	3
GEOG 200	World Regional Geography	3
GEOG 260	Introduction to Geopolitics	3
GEOG 365	Political Geography	3
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 180	Introduction to East Asian History	3
HIST 270	Introduction to Greek and Roman Civilization	3
HIST 315	Comparative African-American Cultures	3
HIST 462	History of the American West	3
HIST 461	Idaho and the Pacific Northwest	3
HIST 380	Disease and Culture:History of Western Medicine	3
HIST 382	History of Biology: Conflicts and Controversies	3
HIST 388	History of Mathematics	3

HIST 420	History of Women in American Society	3
HIST 424	American Environmental History	3
HIST 430	U.S. Diplomatic History	3
HIST 431	Stolen Continents, The Indian Story: Indian History to 1840	3
HIST 438	Modern Mexico and the Americas	3
HIST 439	Modern Latin America	3
HIST 440	Social Revolution in Latin America	3
HIST 441	Slavery and Freedom in the Americas	3
HIST 449	Tudor-Stuart Britian 1485-1660	3
HIST 452	Europe in the Age of the Revolution, 1770-1880	3
HIST 454	Pictures and Power: Photography, Politics, and American History	3
HIST 456	Anti-Semitism and the Holocaust	3
HIST 457	History of the Middle East	3
HIST 460	Conspiracies and Secret Societies in History	3
HIST 466	Eastern Europe Since 1774	3
HIST 467	Russia to 1894	3
HIST 468	Russia and Soviet Union Since 1894	3
HIST 482	Japan, 1600 to Present	3
HIST 484	Modern China, 1840s to Present	3
IS 325	The Contemporary Muslim World	3
IS 326	Africa Today	3
IS 350	Sports and International Affairs	3
NRS 125	Introduction to Conservation and Natural Resources	3
NRS 235	Society and Natural Resources	3
POLS 101	American National Government	3
POLS 205	Introduction to Comparative Politics	3
POLS 237	Introduction to International Politics	3
POLS 275	American State and Local Government	3
POLS 331	American Political Parties and Elections	3
POLS 332	American Congress	3
POLS 333	American Political Culture	3
POLS 338	American Foreign Policy	3
POLS 381	European Politics	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
SOC 130	Introduction to Criminology	3
SOC 201	Introduction to Inequalities & Inclusion	3
SOC 230	Social Problems	3
SOC 336	Comparative Criminal Justice Systems	3
SOC 340	Social Change & Globalization	3
SOC 343	Power, Politics, and Society	3
SOC 423	Economic (In)Justice in the United States	3
SOC 424	Sociology of Gender	3
SOC 427	Racial and Ethnic Relations	3
SOC 439	Inequalities in the Justice System	3
SOC 450	Dynamics of Social Protest	3

Within the J-3-e, J-3-f, J-3-g categories, students must complete a total of 18 credits.

J-3-f. American Diversity (One course) and International (One course or an approved study abroad experience)

As we live in an increasingly diverse and multicultural world, the purpose of these courses is to prepare students to understand, communicate and collaborate with those from diverse communities within the United States and throughout the world.

The American diversity courses seek to increase awareness of contemporary and historical issues surrounding the social and cultural diversity in the U.S. Students engage in critical thinking and inquiry into the issues, complexities, and implications of diversity, and how social, economic, and/or political forces have shaped American communities. Diversity includes such characteristics as ability, age, ethnicity, gender, race, religion, sexual orientation, and socioeconomic status.

One course chosen from the approved American diversity courses listed below. If a student takes a General Education course in another category that also appears on the list of approved American diversity courses, then this requirement is considered to be completed.

The international courses seek to develop an understanding of international values, belief systems and social issues that have contributed to current balances of power and cultural relations. Students develop an understanding of the roles that the United States and other countries have played in global relations and the ways cultures have interacted and influenced each other.

One course chosen from the approved international courses listed below. If a student takes a General Education course in another category that also appears on the list of approved International courses, then this requirement is considered to be completed. The international requirement may be waived if a student successfully completes an approved Summer, Fall, or Spring program abroad through the International Programs Office.

Approved American Diversity Courses:

Code	Title	Hours
AIST 320	Native American & Indigenous Film	3
AIST 401	Contemporary American Indian Issues	3
AIST 422	Plateau Indians	3
AIST 484	American Indian Literature	3
AMST 301	Studies in American Culture	3
ANTH 329	North American Indians	3
ANTH 350	Food, Culture, and Society	3
ARCH 411	Native American Architecture	3
COMM 432	Gender and Communication	3
COMM 491	Communication and Aging	3
CORS 232	Science on Your Plate: Food Safety, Risks and Technology	3
DAN 100	Dance in Society	3
EDCI 302	Teaching Culturally Diverse Learners	3
ENGL 380	Studies in U.S. Ethnic Literatures	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 315	Comparative African-American Cultures	3
HIST 461	Idaho and the Pacific Northwest	3
HIST 462	History of the American West	3
HIST 414	History and Film	3
HIST 420	History of Women in American Society	3

HIST 424	American Environmental History	3
HIST 431	Stolen Continents, The Indian Story: Indian History to 1840	3
HIST 454	Pictures and Power: Photography, Politics, and American History	3
JAMM 340	Cultural Diversity and the Media	3
JAMM 445	History of Mass Media	3
MUSH 410	Studies in Jazz History	3
MUSI 100	Introduction to Music	3
POLS 101	American National Government	3
POLS 333	American Political Culture	3
POLS 468	Civil Liberties	3
PSYC 315	Psychology of Women	3
PSYC 419	Adult Development and Aging	3
SOC 101	Introduction to Sociology	3
SOC 201	Introduction to Inequalities & Inclusion	3
SOC 230	Social Problems	3
SOC 423	Economic (In)Justice in the United States	3
SOC 424	Sociology of Gender	3
SOC 427	Racial and Ethnic Relations	3
SOC 439	Inequalities in the Justice System	3
SOC 450	Dynamics of Social Protest	3
SPAN 306	Culture and Institutions of Latin America	3
SPAN 413	Spanish American Short Fiction	3
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	3

Approved International Courses:

Code	Title	Hours
AFST 101	Introduction to Africana Studies	3
AGEC 481	Agricultural Markets in a Global Economy	3
AGED 406	Exploring International Agriculture	3
ANTH 102	Cultural Anthropology	3
ANTH 261	Language and Culture	3
ANTH 462	Human Issues in International Development	3
ART 100	World Art and Culture	3
ART 213	History and Theory of Modern Design	3
ART 302	Modern Art and Theory	3
ART 303	Contemporary Art and Theory	3
ART 313	History and Theory of Modern Design	3
CHIN 110	Elementary Chinese I	4
CHIN 112	Elementary Chinese II	4
CHIN 210	Intermediate Chinese I	4
CHIN 212	Intermediate Chinese II	4
COMM 335	Intercultural Communication	3
ECON 446	International Economics	3
ECON 447	International Development Economics	3
ENGL 221	History of Film 1895-1945	3
ENGL 222	History of Film 1945-Present	3
ENVS 225	International Environmental Issues Seminar	3
FCS 411	Global Nutrition	3
FCS 419	Dress and Culture	3
FLEN 307	Institutions of the European Union	3
FLEN 313	French/Francophone Literature in Translation	3
FLEN 315	French/Francophone Cinema in Translation	3
FLEN 324	Topics in German Literature in Translation	3
FLEN 331	Japanese Anime	3
FLEN 391	Hispanic Film	3
FLEN 394	Latin American Literature in Translation	3
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
FREN 301	Advanced French Grammar	3
FREN 302	Advanced French Writing Skills	3
FREN 304	Connecting French Language and Culture	3
FREN 307	French Phonetics	3
FREN 308	Advanced French Conversation	3
FREN 407	French & Francophone Literatures	3
FREN 408	French and Francophone Culture and Institutions	3
GEOG 165	Human Geography	3
GEOG 200	World Regional Geography	3
GEOG 260	Introduction to Geopolitics	3
GEOG 350	Geography of Development	3-4
GEOG 360	Population Dynamics and Distribution	3-4
GEOG 365	Political Geography	3
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
GERM 301	German Reading and Writing	3
GERM 302	German Listening and Speaking	3
GERM 420	Topics in German Culture & Literature - Themes	3
GERM 440	German Media	3
HIST 101	World History I	3
HIST 102	World History II	3
HIST 180	Introduction to East Asian History	3
HIST 270	Introduction to Greek and Roman Civilization	3
HIST 315	Comparative African-American Cultures	3
HIST 350	The Age of Enlightenment: European Culture & Ideas, 1680-1800	3
HIST 357	Women in Pre-Modern European History	3
HIST 366	Modern European Cultural and Intellectual History, 1880-1980	3
HIST 371	History of England	3
HIST 372	History of England	3
HIST 378	History of Science I: Antiquity to 1700	3
HIST 379	History of Science II: 1700-Present	3
HIST 380	Disease and Culture:History of Western Medicine	3
HIST 382	History of Biology: Conflicts and Controversies	3
HIST 388	History of Mathematics	3
HIST 414	History and Film	3
HIST 430	U.S. Diplomatic History	3
HIST 438	Modern Mexico and the Americas	3
HIST 439	Modern Latin America	3

HIST 440	Social Revolution in Latin America	3
HIST 441	Slavery and Freedom in the Americas	3
HIST 442	The Medieval Church: Europe in the Early and High Middle Ages	3
HIST 443	The Medieval State: Europe in the High and Late Middle Ages	3
HIST 445	Medieval English Constitutional and Legal History: 1066-1485	3
HIST 447	The Renaissance	3
HIST 448	The Reformation	3
HIST 449	Tudor-Stuart Britian 1485-1660	3
HIST 452	Europe in the Age of the Revolution, 1770-1880	3
HIST 456	Anti-Semitism and the Holocaust	3
HIST 457	History of the Middle East	3
HIST 460	Conspiracies and Secret Societies in History	3
HIST 466	Eastern Europe Since 1774	3
HIST 467	Russia to 1894	3
HIST 468	Russia and Soviet Union Since 1894	3
HIST 482	Japan, 1600 to Present	3
HIST 484	Modern China, 1840s to Present	3
HIST 485	Chinese Social and Cultural History	3
IAD 281	History of Interiors I	3
IAD 282	History of Interiors II	3
IS 325	The Contemporary Muslim World	3
IS 326	Africa Today	3
IS 350	Sports and International Affairs	3
IS 370	African Community, Culture, and Music	1-3
JAMM 490	Global Media	3
JAPN 101	Elementary Japanese I	4
JAPN 102	Elementary Japanese II	4
JAPN 201	Intermediate Japanese I	4
JAPN 202	Intermediate Japanese II	4
JAPN 301	Japanese Reading	3
JAPN 303	Japanese Speaking	3
LARC 390	Italian Hill Towns and Urban Centers	3
LAS 409	Modern Latin American Society	3
LAS 413	Span Amer Short Fiction	3
LAS 422	Mexican Culture through Cinema	3
MUSH 420	Studies in World Music	3
PHIL 367	Global Justice	3
POLS 205	Introduction to Comparative Politics	3
POLS 237	Introduction to International Politics	3
POLS 338	American Foreign Policy	3
POLS 381	European Politics	3
POLS 385	Political Psychology	3
POLS 420	Introduction to Asian Politics	3
POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	3
POLS 449	World Politics and War	3
POLS 480	Politics of Development	3
POLS 487	Political Violence and Revolution	3
SOC 336	Comparative Criminal Justice Systems	3
SOC 340	Social Change & Globalization	3
SOC 343	Power, Politics, and Society	3
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
SPAN 104	Elementary Spanish Transition	4
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
SPAN 301	Advanced Grammar	3
SPAN 302	Advanced Composition	3
SPAN 303	Spanish Conversation	3
SPAN 305	Culture and Institutions of Spain	3
SPAN 306	Culture and Institutions of Latin America	3
SPAN 308	Proficiency in Reading	3
SPAN 310	Spanish for the Professions I	3
SPAN 401	Readings: Spanish Literature	3
SPAN 402	Readings: Spanish American Literature	3
SPAN 409	Modern Latin American Society	3
SPAN 412	Spanish Short Fiction	3
SPAN 413	Spanish American Short Fiction	3
SPAN 419	Latin America Theatre Through Literature	3
SPAN 420	Modern Spanish Theatre Through Literature	3
SPAN 421	Bilingual and Bicultural Identities	3
SPAN 422	Mexican Culture through Cinema	3
SPAN 423	Culture and Identity in Spanish Cinema	3
THE 468	Theatre History	3

Within the J-3-e, J-3-f, J-3-g categories, students must complete a total of 18 credits.

J-3-g. Integrated Studies - ISEM 101 (3 cr), ISEM 301 (1 cr), and Senior Experience

The purpose of these courses is to provide students with the tools of integrative thinking, which are critical for problem solving, creativity and innovation, and communication and collaboration. Integrated learning is the competency to attain, use, and develop knowledge from a variety of disciplines and perspectives, such as the arts, humanities, sciences, and social sciences, with disciplinary specialization (to think divergently, distinguishing different perspectives), and to incorporate information across disciplines and perspectives (to think convergently, re-connecting diverse perspectives in novel ways). It is a cumulative learning competency, initiated as a first-year student and culminating as reflected in a graduating senior.

One course from ISEM 101 (open to first-year students only). One credit of ISEM 301. One course chosen from the approved Senior Experience courses listed below.

Approved Senior Experience Courses:

Code	Title	Hours
AGEC 478	Advanced Agribusiness Management	3
AGED 471	Senior Capstone in Agricultural Education	1
AGED 498	Internship (Max 10 credits)	1-10
ARCH 454	Architectural Design: Vertical Studio	6
ART 410	Professional Practices	2
ART 490	BFA Art/Design Studio	6
ART 491	Information Design	3
ART 495	Critical Art Writing Seminar	3

AVS 450	Issues in Animal Agriculture	2
BE 478	Engineering Design I	3
BE 479	Engineering Design II	3
BE 491	Senior Seminar	1
BIOL 401	Undergraduate Research	1-4
BIOL 405	Practicum in Anatomy Laboratory Teaching	2-4
BIOL 407	Practicum in Biology Laboratory Teaching	2-6
BIOL 408	Practicum in Human Physiology Laboratory Teaching	2-4
BIOL 411	Senior Capstone	2
BIOL 491	Practicum in Teaching	2
BUS 490	Strategic Management	3
CE 494	Senior Design Project	3
CHE 452	Environmental Management and Design	1-16
CHE 454	Process Analysis and Design II	3
CHEM 409	Proseminar	1
COMM 453	Communication Theory	3
CS 481	CS Senior Capstone Design II	3
ECE 481	EE Senior Design II	3
ECE 483	Computer Engineering Senior Design II	3
ECON 490	Economic Theory and Policy	3
ENGL 440	Client-Based Writing	3
ENGL 490	Senior Seminar	3
EDCI 401	Internship Seminar	1
EDCI 485	Secondary Internship	15
ENT 438	Pesticides in the Environment	3
ENVS 497	Senior Research	2-4
FCS 401	Professional Ethics and Practice in CFCS	1
FCS 424	Senior Experience: Apparel Design	4
FCS 432	Apparel Promotion and Merchandising	3
FCS 486	Nutrition in the Life Cycle	3
FCS 492	Nutrition Education in the Life Cycle	3
FCS 497	Internship Preschool	1-16
FISH 418	Fisheries Management	4
FISH 473	ECB Senior Presentation	1
FISH 495	Fisheries Seminar	1
FL 401	MLC International Experience	1
FOR 424	Silviculture Principles and Practices	4
FOR 427	Prescribed Burning Lab	3
FOR 473	ECB Senior Presentation	1
FS 489	Food Product Development	3
GEOG 493	Senior Capstone in Geography	3
GEOL 490	Geology Field Camp	3
HIST 495	History Senior Seminar	3
IAD 452	Interior Design VI	6
INDT 484	Industrial Technology Capstone I	3
INTR 401	Career and Leadership Development	2
IS 495	International Studies Senior Seminar	3
JAMM 448	Law of Mass Media	3
JAMM 476	Advanced Digital Media Production II	3
LARC 480	The Resilient Landscape	3
MATH 415	Cryptography	3
ME 424	Mechanical Systems Design I	3
ME 426	Mechanical Systems Design II	3
MUSA 490	Half Recital	0
MUSA 491	Recital	0
MUSC 481	Senior Thesis in Music Theory II	1
MUSC 490	Senior Recital	0
MUSH 481	Senior Thesis in Music History II	1
MUST 432	Practicum: Music Teaching	11
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
NRS 473	ECB Senior Presentation	1
NRS 476	Environmental Project Management and Decision Making	4
ORGS 410	Capstone Project in Organizational Sciences	1-6
PEP 498	Internship in Exercise Science & Health	1-16
PHIL 490	Senior Seminar	3
PHYS 407	Communicating Science	1
PHYS 492	Senior Research	1
POLS 490	Senior Experience	3
PSYC 415	History and Systems of Psychology	3
REM 456	Integrated Rangeland Management	3
REM 473	ECB Senior Presentation	1
RMAT 473	ECB Senior Presentation	1
RMAT/MKTG 495	Product Development and Brand Management	3
RSTM 498	Internship in Recreation, Sport, and Tourism	1-16
SOC 460	Capstone: Sociology in Action	3
SOC 461	Capstone:Justice Policy Issues	3
SOC 462	Senior Practicum	3
SOC 464	Criminology Abroad	3
SOIL 427	Sustainable Food Systems	3
THE 483	Senior Capstone Project	1
VTD 457	Capstone Design Studio I	6
WLF 473	ECB Senior Presentation	1
WLF 492	Wildlife Management	4

Within the J-3-e, J-3-f, J-3-g categories, students must complete a total of 18 credits.

J-4. Grade Requirements

To qualify for the baccalaureate degree, a candidate must have a UI grade-point average of 2.00 or better. See exceptions under E-4 and E-5 (p. 84).

J-5. Credit Limitations

A candidate may count toward a baccalaureate degree no more than:

J-5-a

Thirty credits earned in Experiential Learning and Technical Competency (see regulation I-2-b (p. 90) and I-2-c (p. 90)).

J-5-b

Twelve credits earned under the pass-fail option (see regulation B-11 (p. 80)).

J-5-c

Zero credits in remedial-level courses.

J-5-d

Zero credits earned in Professional Development courses.

J-6. Assignment of Curricular Requirements (Catalog Issue)

In addition to fulfilling the general university requirements for degrees, candidates for baccalaureate degrees must satisfy the particular requirements specified for their curricula. The pertinent requirements are those contained in the most recent UI catalog issue that was in effect at the time of, or subsequent to, the candidate's initial enrollment as a degree-seeking student at UI. The earliest catalog issue available to students re-admitted as a degree-seeking student at the UI, is the most recent catalog at the time of re-enrollment. A catalog issue is valid for a maximum of seven years from its effective date. The effective date of a catalog issue is the first Monday following spring graduation.

J-7. Concurrent and Subsequent Baccalaureate Degrees.

J-7-a. Concurrent Degrees.

A student may concurrently pursue degrees in one or more colleges. For exceptions to this rule, see general studies in part 4. In addition to the university requirements students must fulfill the departmental and college requirements for all degrees.

J-7-b. Subsequent Degrees.

Students who have earned a baccalaureate degree and who wish to complete the requirements for a subsequent degree must earn at least 15 credits as an undergraduate student after completion of the previous baccalaureate degree. And fulfill the university, departmental and college requirements for the second degree. For exceptions to this regulation, see general studies in part 4.

J-8. Degree with Double Major.

Students may complete two different majors (curricula) offered under a particular baccalaureate degree and have both majors shown on their academic records and diplomas, e.g., Bachelor of Arts with majors in history and political science. In addition to the university requirements students must fulfill the departmental and college requirements for all majors. Each of the majors must lead to the same degree. When majors leading to different degrees are involved, see the requirements applicable to the awarding of a concurrent baccalaureate degree (J-7-a).

J-9. Academic Minors

J-9-a

An academic minor is a prescribed course of study consisting of 18 or more credits which supplements an undergraduate major at the University of Idaho. For descriptions of minor curricula, see the programs of the degree-granting units in the individual departmental section. In the following paragraphs of J-9, "minor" denotes "academic minor," which is to be distinguished from "teaching minor"; for information on the latter, see the Department of Curriculum and Instruction (p. 173) section.

J-9-b

A student may pursue one or more minors in addition to a major by filing with the registrar a declaration of intention to do so. Completion of a minor is required only if specified by the degree-granting unit, but any minor completed is recorded on the student's academic record.

J-9-c

Transfer credits may be applied to a minor , however, at least 9 credits of those completing the minor's requirements must be in UI courses. Similar to the residency requirements for a baccalaureate degree in J-2, no credits awarded for independent study, bypassed courses (see I-2-d (p. 90)), credit by examination (see I-1-a, I-1-c, or I-2-a (p. 90)), College Level Examination Program (CLEP – see I-2-b (p. 90)), or experiential learning (see I-2-b (p. 90)) can be counted among these 9 UI credits. Study abroad and student exchange credits may be counted toward this requirement with prior approval by the student's academic department and dean.

J-9-d

A student may complete an undergraduate minor even though he or she has already earned a baccalaureate degree at the University of Idaho. If the sole objective is to complete an undergraduate minor, the student should declare a "Minor-Only" curriculum in the department offering the minor. Students who declare a minor-only curriculum are not eligible for financial aid funds (see the Student Financial Aid Services (p. 41) section).

K - ACADEMIC HONORS

K-1. Graduation with Honors

Candidates for baccalaureate degrees are graduated with honors if they satisfy ONE of the following conditions. Note: Graduation with honors is determined at the point in time when the degree is posted to the student's academic record based upon the student's grade point average at that time. Grade corrections subsequent to the posting of the degree will be processed by the Registrar's Office but will not impact the honors designation for the student.

1. Their cumulative UI grade-point averages are as specified in K-1-a, K-1-b, or K-1-c and they have earned at least 56 credits in UI courses OR
2. Both their cumulative UI grade-point averages AND their grade-point average from all sources (the overall GPA on Banner) are as specified in K-1-a, K-1-b, or K-1-c, and they have earned at least 32 credits in UI courses.

No credits earned through correspondence study, bypassed courses, credit by examination, College Level Examination Program, experiential learning, or technical competence may be counted among these 56 or 32 credits. Candidates for the degree of Juris Doctor are graduated with honors under the same conditions, except the grade-point average considered is based exclusively on the student's record in the College of Law. Honors are not awarded with degrees earned through the College of Graduate Studies.

K-1-a

Candidates whose grade-point averages would place them within the top 3 percent of graduates from their respective colleges over the preceding five years are graduated **summa cum laude** (with highest distinction).

K-1-b

Candidates whose grade-point averages would place them within the top 6 percent (but below the top 3 percent) of graduates from their respective colleges over the preceding five years are graduated **magna cum laude** (with great distinction).

K-1-c

Candidates whose grade-point averages would place them within the top 10 percent (but below the top 6 percent) of graduates from their respective colleges over the preceding five years are graduated **cum laude** (with distinction).

K-2. Dean's List

Undergraduate students who are registered for at least 12 credits (10 in the College of Law) and attain a grade-point average of 3.50 (3.00 in the College of Law) for a given semester are placed on lists prepared for the college deans. [Note: The 3.50 GPA is based on 12 graded credit hours (GPA hours) and does not include courses graded pass/fail.] These lists are publicized within UI and are distributed to news agencies.

L - ACADEMIC STANDING, PROBATION, DISQUALIFICATION, AND REINSTATEMENT

L-1. Academic Standing for Undergraduate Students

Students are considered to be in good academic standing when they have a semester and a UI cumulative grade-point average of 2.00 or higher.

L-2. Academic Probation for Undergraduates

L-2-a

At the end of a semester, undergraduate students who do not attain a UI cumulative grade-point average of 2.00 are placed on academic probation for the next semester of enrollment and are referred to the appropriate academic dean for advising. The effect of this probationary status is to serve notice that if a student's cumulative record at the end of the next semester in residence is unsatisfactory he or she will be disqualified and ineligible to continue at UI. Students in their first semester of college who achieve less than a 1.0 grade point average at the end of the semester will be placed on first academic disqualification rather than probation (see L-4-a).

L-2-b

Students on academic probation who attain a UI cumulative grade-point average of 2.00 or higher are automatically removed from probation.

L-2-c.

Students on academic probation who attain a semester grade-point average of 2.00 or higher during the next or subsequent semester after being placed on probation, but whose cumulative grade-point average is still below 2.00 remain on academic probation.

L-2-d

Because final grades for a probationary term may not be available until after a student has registered for an ensuing term, such registration must be considered tentative until the student's academic standing may be determined. If the student is disqualified at the end of the probationary term, the registration for the ensuing term is invalid and will be cancelled unless the student is reinstated (see L-4).

L-3. Academic Disqualification for Undergraduates

L-3-a

Students in their first semester of college who achieve less than a 1.0 grade point average at the end of the semester will be placed on first academic disqualification.

L-3-b

Students on academic probation with less than 33 cumulative net credits will be disqualified if their semester grade-point average falls below a 2.00 and their UI cumulative grade-point average falls below a 1.80. Students in this group with a semester grade-point average below a 2.00 and a UI cumulative GPA between 1.80 and 1.99 will remain on probation.

L-3-c

Students on academic probation with 33 or more cumulative net credits will be disqualified at the end of a probationary semester if both their UI cumulative grade-point average and their semester grade-point average are below 2.00.

L-3-d

To reregister after being academically disqualified, students must be reinstated. (Students must contact their respective college, prior to the beginning of the semester, for the deadline to petition for reinstatement.)

L-3-e

Because final grades for a probationary term may not be available until after a student has registered for an ensuing term, such registration must be considered tentative until the student's academic standing may be determined. If the student is disqualified at the end of the probationary term, the registration for the ensuing term is invalid and will be cancelled unless the student is reinstated (see L-4).

L-4. Academic Reinstatement for Undergraduates

L-4-a

After a first academic disqualification, students may be reinstated (i.e., have their eligibility to continue restored) by petition to and favorable action by the college in which they are enrolled OR by remaining out of UI for at least one semester. Summer does not qualify as a one semester absence.

L-4-b

After a second academic disqualification, students may be reinstated at any time only by petition to and favorable action by the college in which they are enrolled.

L-4-c

Students academically disqualified for a third time may be reinstated only after successful petition to the college in which they are enrolled and the Academic Petitions Committee.

L-4-d

Students who have been reinstated may continue to register on probation so long as they attain a 2.00 or better grade-point average for each semester following a disqualification.

L-4-e

Students who are academically disqualified and reinstated are reinstated on academic probation.

L-5. Academic Warning for Undergraduates

Students not on probation who attain a grade-point average below 2.00 during a given semester without dropping below a UI cumulative grade-point average of 2.00 receive an academic warning. Although this does not affect their academic standing or their eligibility to register, the students are referred to the appropriate academic dean for advising.

L-6. Summer Session

Academic disqualification at the end of a spring semester does not affect a student's eligibility to continue in the immediately ensuing summer, but to register in any subsequent term the student must be reinstated. Academic standing is not computed at the end of summer session.

L-7. Fresh Start

Former University of Idaho undergraduate students who wish to reenter the university as an undergraduate student may apply for a "Fresh Start" as described below. A student may receive a Fresh Start only once.

L-7-a

To qualify for a Fresh Start, students

1. must not have been enrolled as a degree seeking student at the University of Idaho for at least the five years immediately before reentering the university as a degree seeking student, and
2. must have a University of Idaho cumulative GPA of less than 2.00.

L-7-b

After returning to the University of Idaho, a student must complete 24 credits of academic courses with a minimum cumulative GPA of 2.00 before applying for a Fresh Start. A student must apply for a Fresh Start through their College Dean's Office by the end of the semester following that in which they met these minimum credit and GPA requirements. Once the student's Fresh Start application has been approved the student's cumulative GPA will be reset to 0.00 as of the time of readmission to the University of Idaho.

L-7-c

If the Fresh Start is approved by the college, the count for the 21-credit limit on withdrawals (see C-2 (p. 82)) will be reset to 0 as of the time of admission to the Fresh Start Program.

L-7-d

University probation and disqualification regulations apply throughout the Fresh Start process.

L-7-e

To graduate with honors, a student in the Fresh Start Program must have at least 56 credits in UI courses after the Fresh Start (see K-1 (p. 99)). Fresh Start Program participants are eligible for the dean's list (see K-2 (p. 99)) on a semester-by-semester basis.

L-7-f

Application forms and explanatory materials are available at the Registrar's Office.

L-8. Academic Standing for Graduate Students

Graduate students are considered to be in good standing when they have a semester and cumulative grade-point average of 3.00 or higher.

L-9. Academic Probation for Graduate Students

L-9-a

A graduate student is placed on academic probation after any semester or summer session in which a GPA of less than 3.00 is earned in courses placed on the graduate transcript, regardless of the student's cumulative GPA.

L-9-b

Graduate students on academic probation who attain a semester and cumulative grade-point average of 3.0 or higher are automatically removed from academic probation.

L-9-c

Graduate students on academic probation who attain a semester GPA of 3.00 or higher during the next or subsequent semester or summer session after being placed on probation, but whose cumulative GPA is still below a 3.00, will remain on academic probation.

L-10. Academic Disqualification for Graduate Students

A graduate student will be disqualified if a semester GPA of less than 3.00 (regardless of cumulative GPA) is earned on courses placed on the graduate transcript during the second, consecutive semester or summer session

L-11 Academic Reinstatement for Graduate Students

L-11-a

A graduate student may be reinstated after disqualification under the following conditions: the student may not enroll as a graduate student for at least one semester (fall or spring), must get the positive recommendation of his or her program's administrator, and must gain approval from the College of Graduate Studies.

L-11-b

Reinstatement is granted for a specific semester only and the student must enroll in that semester.

L-11-c

The student must receive a term GPA of at least 3.0 the first semester back in the College of Graduate Studies.

L-11-d

A reinstated student will be placed on probation if their cumulative GPA is below a 3.00.

L-11-e

A reinstated student will be disqualified after the second consecutive term where a 3.0 GPA was not achieved (see L-10).

L-12

Regulation L does not apply to law students. See the College of Law (p. 241) Announcement for information for law students.

M - ATTENDANCE, FIELD TRIPS, AND OFFICIAL STUDENT TRAVEL

M-1. Attendance

Instructors will make clear at the beginning of each course the extent to which grades are dependent on attendance and in-class participation. Students are responsible for class attendance. Students are accountable for communicating with the instructor and making up missed work in the event of any absence. Instructors shall provide reasonable opportunity for students to make up work when the student's absence from class resulted from:

1. participation in official university activities and programs,
2. personal illness,
3. family illness and care, or
4. other compelling circumstances.

M-2. Field Trips and Official Student Travel

"Field trip" is defined as any required, course-related student travel that exceeds 25 air miles from the campus or conflicts with other classes that the students involved are taking. (A trip taken within 25 air miles during the class scheduled for the particular class or at a time that does not conflict with other classes the students involved are taking is a "local trip," not a "field trip.")

M-2-a. Missed Class Work

Students participating in field trips, as defined above, or other official UI activities are responsible for conferring in advance with the instructors of any classes that will be missed in order to be eligible for making up missed class work. (See M-1.)

M-2-b. Approval of Course-Related Field Trips

Administrative approval for course-related field trips will be obtained by the person in charge of the trip as follows:

1. Each field trip as identified in the catalog course description requires prior approval by the department in accordance with divisional procedures (application for approval should be made at least one week before the expected departure).
2. Each field trip NOT identified in the catalog course description requires prior approval by the departmental administrator, and the dean of the college (application for approval should be made at least two weeks before the expected departure).

M-2-c. Approval of Other Official Student Travel

Administrative approval for official student travel that is NOT course related is obtained from the vice president for student affairs (application for approval should be made at least two weeks before the expected departure).

M-2-d. Costs

When a college can cover all or part of the cost of a course-related field trip from allocated funds, the college should do so. If the college cannot cover the cost, or a portion thereof, the cost (or remaining portion) must be borne in proportionate share by the students in the course. Students missing required field trips identified in the catalog course description must pay their proportionate shares.

M-2-e. Field-Trip Completion Deadline

All field trips and other UI-approved student travel must be completed before 7:30 a.m. on the fifth day of classes before the start of final examinations. Part3 Pg. 4 of 6

M-2-f. Vehicle Information

Information concerning privately owned vehicles (registration, insurance, driver's license, etc.) to be used for field trips or other official student travel must be filed in the Risk Management Office (Rm. 209, Admin. Bldg.). Administrators of departments and divisions are responsible for ensuring that the required information is filed before the initial use of each privately owned vehicle in a given academic year.

M-3. Accommodation of Religious Observances in the Administration of Examinations

When tests or examinations fall on days objectionable to a student because of religious beliefs, the student should contact the instructor as soon as possible. The instructor may require the student to submit a concise, written statement of the reasons for the request. If the request appears to be made in good faith, the instructor should make alternative arrangements for the administration of the examination or test. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the departmental administrator, dean, or provost, in that order.

M-4. Drop for Non-attendance

Students are responsible for notifying their instructors through the Registrar when extenuating circumstances not covered as an official absence as defined in M-1 prevent their attendance during the first week of the semester. Instructors may notify the Registrar to drop students who have not attended class or laboratory meetings nor notified the instructor through the Registrar by the end of the sixth business day following the start of the class. Valid reasons for missing classes do not relieve the student of making up the work missed.

N - CLASS RATING

Class ratings of undergraduates are determined as follows:

Sophomore - 26 credits

Junior - 58 credits

Senior - 90 credits

O - MISCELLANEOUS

O-1. Credit Requirements for Full-Time Students

O-1-a

For purposes other than fees, UI students in all divisions except the College of Graduate Studies and the College of Law must carry 12 credits each semester or summer session to be classified as full time.

O-1-b

For fee and tuition purposes only, students carrying ten or more credits (or equivalent in audits and zero-credit registrations) and all teaching/research assistants on full appointment, regardless of the number of credits they register for, are classified as full-time students.

O-1-c

Students in the College of Graduate Studies are considered full time:

1. when registered for nine credits (or equivalent) of course and/or thesis work; or
2. when on full-time appointments as teaching assistants or research assistants.

O-1-d

Veterans and war orphans attending UI on the G.I. Bill must carry certain minimum credit loads to be considered by the Veterans' Administration for benefits as indicated in the table accompanying this regulation. (Audits do not count; repeats and reviews may be included when the student's advisor certifies that the course is required in the student's curriculum or is needed to remove a deficiency or to provide essential background for the student's program; file a copy of the program with the veterans' clerk at the Office of Dean of Students.)

Benefits	Academic year Undergraduate	Academic Year Graduate	Summer Session Undergrad & Grad
Full	12 or more	9 or more	Must be Arranged
Three-fourths	9-11	6-8	
Half	6-8	3-5	
Fees and tuition only	Fewer than 6	Fewer than 3	

O-1-e

Students in the College of Law are considered full time when registered for 10 credits (or equivalent) of course work.

O-1-f

The president, vice president, and senators of the Associated Students University of Idaho are considered full time when carrying at least the following credit loads: president, three credits; vice president and senators, six credits. The editor and associate editor of the *Argonaut* are considered full time when paying full-time student fees and carrying at least the following credit loads: editor, three credits; associate editor, six credits.

O-2. Academic Performance

Instructors and students are responsible for maintaining academic standards and integrity in their classes. Consequences for academic dishonesty may be imposed by the course instructor. Such academic consequences may include but cannot exceed a grade of "F" in the course. If the student deems the grade unfair, he or she may appeal through the appropriate departmental administrator and college dean, and finally to the Academic Hearing Board.

In addition to the academic consequences, disciplinary penalties for academic dishonesty may include suspension or expulsion and must be handled by the Student Judicial System, which is described in the Student Code of Conduct section of the *"Policies & Information of Interest to Students"* booklet and the *Faculty-Staff Handbook.*

O-3. Application for Graduation

Degree candidates must submit an Application for Graduation to their college. Students should submit applications no later than the semester in which they will be completing their degree requirements. If two degrees are to be received concurrently, separate applications must be filed with the dean(s) of the college(s) concerned. The graduation, binding, and microfilming fees will be posted on the student's account once the graduation application has been fully processed. (See "Fees and Expenses (http://uidaho.smartcatalogiq.com/2017-2018/University-of-Idaho-General-Catalog/Student-Services/Fees-and-Expenses)"). The deadline for filing Applications for Graduation without a late service charge is the 10th day of the semester in which the student will be graduating.

O-4. Commencement

Formal commencement exercises are held at the close of the fall and spring semesters; however, diplomas are also issued at the close of the summer session to such candidates as have completed their graduation requirements at that time. All students who graduate in the summer, fall, or spring are entitled to participate in the commencement exercises. Students must indicate on their application for degree whether they intend to participate in the formal commencement exercises so that appropriate arrangements can be made. Reservations for caps, gowns, and hoods must be made by the date specified by the registrar. Diplomas are ready about six weeks after the end of the academic session in which graduation requirements are completed.

O-5. Limitations on Class Size

O-5-a

Limitations on class size must have prior approval by the dean of the college in which the course is offered. If it becomes necessary to limit the size of a class on a continuing basis (more than two semesters), the limitations must be approved through faculty channels--University Curriculum Committee and university faculty--and be made part of the catalog description of the course.

O-5-b

Preference for enrollment in courses with limitations on class size is given to students enrolling in them for the first time. At the option of the department, students repeating courses for any reason may be placed on standby status. Students in that status are allowed to register for the course, if there is available space, by permission of the department offering the course. In no case may a student

be held in standby status for any one course for more than two consecutive semesters.

O-5-c

Any student denied admission to a class may appeal in writing to the provost for a review of the circumstances involved.

O-6. Students' Right to Change Course Sections

Students have the right to change from one section of a course for which they are qualified to another section of the same course during the first two weeks of classes so long as the section into which they wish to transfer has not reached the maximum number of students that may be accommodated. (See appeal procedure in O-5.)

O-7. Availability of Instructors' Names

As a matter of principle, students and their academic advisors and deans have the right to know the names of the instructors who will teach course sections to be offered during the immediately ensuing semester or summer session. Departments are required to submit the names of instructors for all course sections for publication in the Class Schedule. Where it is impossible to determine the teaching assignments of individual members of the instructional staff before the deadline for the Class Schedule, departments are responsible for making information concerning adjustments in teaching assignments generally available to students, advisors, and deans at such time as they occur.

O-8. Confidentiality of Academic and Counseling Records

See the student records policy in the booklet entitled “Policies and Information of Interest to Students,” available from the Office of the Dean of Students or the Office of the Vice Provost for Student Affairs (TLC 232), and other locations around the campus.

O-9. Deviations from Established Class Schedules

O-9-a

The provost periodically reminds deans and departmental administrators of their responsibility to ensure that classes meet in conformity with the course descriptions and *Class Schedule* . (It is the responsibility of the University Curriculum Committee to see that the time requirements stated in new or revised course descriptions satisfy general regulation D-1 (p. 83), "Credit Defined"; it is the responsibility of the registrar to see that listings in the Class Schedule conform to the respective course descriptions.)

O-9-b

The cancellation of a particular class session or sessions on an occasional basis, normally due to unusual circumstances affecting the instructor of or the students in the class, is a matter for the instructor's discretion. Nonetheless, instructors should keep such cancellations to a minimum, be satisfied that the grounds for cancellation are defensible, give as much advance notice of the cancellation as is possible, and, if time permits, obtain the concurrence of the departmental administrator in advance. Frequent failure of an instructor to meet classes, except for reasons clearly recognizable as adequate, may be grounds for disciplinary action.

O-9-c

The scheduling of required class meetings at times other than those specified in the Class Schedule or authorized in the course descriptions (e.g., field trips) requires approval by the provost. In addition to securing the provost's approval, the instructor must give the students at least two weeks' notice, provide alternative means of completing class requirements for students who have irreconcilable conflicts with the irregular meetings, and, normally, cancel regularly scheduled class meetings equivalent to the irregular meetings. (If it is proposed that such irregular meetings be made a continuing practice, they are to be incorporated in the course description and the revised description submitted to the University Curriculum Committee for routine faculty approval.)

O-9-d

Authorized class meetings at times other than those shown in the Class Schedule is one of the topics that instructors are to discuss at the first or second class session.

O-10. Academic Certificates

The University of Idaho offers Academic Certificates in various academic disciplines. An academic certificate is defined as a coherent body of work designed to reflect specialized expertise. The curricular requirements of an academic certificate can be found in the relevant department in the catalog.

O-10-a. Undergraduate Academic Certificates

1. An undergraduate academic certificate must include at least 12 credits of coursework.
2. All required coursework must be completed with a grade of "C" or better unless the certificate specifies a higher grade requirements.
3. A maximum of six credits of coursework which is either transferred from another regionally accredited institution or is more than five years old at the time of graduation may be used towards completion of an academic certificate.

O-10-b. Graduate Academic Certificates

1. A graduate academic certificate must include at least 12 credits of coursework. At least half of the credits completed towards a graduate academic certificate must be in graduate level coursework.
2. All required coursework must be completed with a grade of "B" or better unless the certificate specifies a higher grade requirement.
3. A maximum of six credits of coursework which is either transferred from another regionally accredited institution or is more than five years old at the time of graduation may be used towards completion of an academic certificate.

COLLEGES AND RELATED UNITS

- College of Agricultural and Life Sciences (p. 108)
- College of Art and Architecture (p. 143)
- College of Business and Economics (p. 156)
- College of Education, Health and Human Sciences (p. 170)
- College of Engineering (p. 200)
- College of Graduate Studies (p. 232)
- College of Law (p. 241)
- College of Letters, Arts and Social Sciences (p. 249)
- College of Natural Resources (p. 301)
- College of Science (p. 332)
- Continuing Education (p. 360)
- Cooperative Programs (p. 361)
- Engineering Outreach Program (p. 362)
- Global Student Success Program (p. 363)
- Independent Study in Idaho (p. 364)
- Interuniversity Program in Public Administration (p. 366)
- Medical Education (WWAMI Program) (p. 367)
- ROTC (p. 368)
- Summer Session (p. 372)
- University Honors Program (p. 373)
- University of Idaho Centers (p. 375)

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES

Michael Parrella, Dean (53 Iddings Wing, Ag. Sc. Bldg.; 208-885-6681); Barbara Petty, Associate Dean and Director of the University of Idaho Extension; Don Thill, Associate Dean and Director of the Idaho Agricultural Experiment Station; Larry Makus, Term Associate Dean and Director of Academic Programs.

The College of Agricultural and Life Sciences provides quality programs in agricultural, food, family and consumer sciences, and related areas to all of Idaho. In addition to academic programs, the college also advances knowledge in these areas by research conducted through the Idaho Agricultural Experiment Station and provides information transfer and application of new knowledge to the state and the nation through the Cooperative Extension System. The college also actively participates in international development and student and faculty exchange programs around the world. The College of Agriculture was established in 1901 and was renamed the College of Agricultural and Life Sciences in 2001. The Margaret Ritchie School of Family and Consumer Sciences became part of the college in 1983.

Advantages

The College of Agricultural and Life Sciences offers a quality education in a professional and friendly atmosphere. Each student has an academic advisor who is readily available to assist in academic and career planning. There is also a Peer Mentor program to help first-time students become acquainted with the college and the university. Undergraduate students often have the opportunity to experience their major by working on research projects and internships directed by faculty members. The college also offers leadership opportunities through a variety of departmental and college student organizations.

Faculty

The faculty are the key to quality education. In the College of Agricultural and Life Sciences, there is a low student/teacher ratio and most classes are taught by faculty members. They bring to their students a strong commitment to teaching and a richness of depth, experience, and research.

Units

The College of Agricultural and Life Sciences offers 24 programs through 6 academic units. The units are Agricultural Economics and Rural Sociology; Agricultural and Extension Education,; Animal and Veterinary Science; Margaret Ritchie School of Family and Consumer Sciences; Bi-State School of Food Science; and Plant, Soil and Entomological Sciences.

Facilities of the College

The College of Agricultural and Life Sciences is housed in five buildings on campus and in many other facilities around the state. Some of the unique facilities include a child development laboratory, a state-of-the-art biotechnology research laboratory, an agricultural engineering laboratory, a food science and toxicology research center, and research farms of more than 2,500 acres for beef, dairy, sheep, plant science, and other programs. In addition to facilities at Moscow, there are offices in 42 counties and research and extension centers at 10 locations throughout Idaho.

Agricultural Experiment Station

The Idaho Agricultural Experiment Station was established in 1892 to support the research function of the College of Agricultural and Life Sciences, and has the responsibility to conduct applied and basic research leading to problem solving and new knowledge for agricultural industries, rural communities, and family living. The Idaho Agricultural Experiment Station is coordinated with and provides research for teaching and extension to more effectively meet the needs of Idaho citizens.

The Idaho Agricultural Experiment Station is integrated into all departments of the college. Thus, most of the college's teaching faculty also have partial research appointments in the experiment station. Other faculty members have combined extension and research appointments and some are assigned to full-time research.

The Idaho agricultural research program is statewide. Research is conducted in a number of areas related to agriculture and on all major agricultural commodities. The administrative center for the research program is located on the Moscow campus. There are 10 research and extension centers in strategic agricultural areas around the state where resident research and extension personnel are located.

The Idaho Agricultural Experiment Station shares the responsibility of developing and educating future scientists through undergraduate research and graduate assistantship programs. Currently, there are approximately 130 graduate students enrolled in the College of Agricultural and Life Sciences, most are on assistantships or stipends. These appointments are generally for two years at the Master of Science level and for three years in Ph.D. programs, during which time the students conduct research as a part of their graduate education.

University of Idaho Extension

The Cooperative Extension System was established by the Smith-Lever Act, signed May 8, 1914, to help extend research to the people of the United States in order to improve their farms, families, and communities. The Idaho legislature approved the Cooperative Extension concept in 1915. In 1917, additional state legislation brought the county boards of commissioners into the cooperative three-way federal, state, and county partnership.

The Extension System is an integral part of the University of Idaho and the College of Agricultural and Life Sciences and is administratively coordinated with the teaching and research functions of the college. The extension function is organized to extend the knowledge created through research to the people of the state of Idaho so that they can apply the findings to their particular situations, thereby solving their problems and improving their quality of life.

The headquarters of the University of Idaho Extension is in Moscow. District offices are located at Caldwell, Coeur d'Alene, and Idaho Falls. The state is the campus for University of Idaho Extension.

Educators live and work in the areas to which they are assigned by mutual agreement of the university and the counties involved. Agricultural, family and consumer sciences, and youth educators are located in 42 of Idaho's 44 counties and are also involved in multi-county programming.

Supporting the county faculty are state Extension specialists located at Idaho Falls, Parma, Caldwell, Aberdeen, Coeur d'Alene, Boise, Twin Falls, Moscow, and Kimberly. These specialists keep up to date by conducting relevant research and through cooperation with research scientists of the College of Agricultural and Life Sciences and the U.S. Department of Agriculture.

Extension educational programs are conducted in five broad areas. These are:

1. Food, food production, and food systems;
2. Health and wellness;
3. Natural resources and the environment;
4. Community development;and
5. Family well-being and 4-H youth development.

Programs are both disciplinary and interdisciplinary and are designed to address the issues facing Idahoans. Major programming issues include water quality, youth at risk, waste management, food security, obesity, community vitality, agricultural sustainability, and STEM (science, technology, engineering, math).

The University of Idaho Extension helps people improve the social, economic, and environmental qualities of their lives through research-based education and leadership development focused on issues and needs. To accomplish this mission, University of Idaho Extension works under the basic philosophy that programs planned with people will achieve greater success than programs planned for them. Extension takes the resources and research of the land-grant university out into the state so that Idaho's citizens can benefit from their university.

General College Requirements for Graduation

University Requirements

See regulation J (p. 91) for requirements that all students in the university must meet.

College Requirements

See the individual department section for degree requirements within each department.

Major Curricula

The specific requirements for the undergraduate majors are listed in the individual department section. Each student is assigned an advisor who assists in the planning of his or her program; however, the student has the final responsibility for the completion of all university, college, and departmental requirements.

Degrees and Curricula Offered

Students in the College of Agricultural and Life Sciences are encouraged to pursue a broad education. In each curriculum, minimum requirements are specified in agriculture, life or family and consumer sciences disciplines; in the biological, physical, and social sciences; and in humanities to qualify the graduate to enter professional fields in agriculture, life and family and consumer sciences. Each curriculum also permits students to choose elective courses that will assist in personal and professional growth, development of communication skills, and a better understanding of the world in which we live.

Undergraduate

Baccalaureate degrees and major curricula offered by the College of Agricultural and Life Sciences include Bachelor of Science degrees in Agricultural and Life Sciences (with majors in Agricultural Science, Communication and Leadership; Agricultural Systems Management; and Sustainable Crop and Landscape Systems with 5 emphasis areas); Agricultural Education; Agricultural Economics (with emphases in Agribusiness or Applied Economics); Animal and Veterinary Science (with options in production, business, dairy science, and science/preveterinary); Family and Consumer Sciences with degrees in Early Childhood Development and Education, and Family and Consumer Sciences (with majors in: child, family, and consumer studies – 3 options; apparel, textiles, and design; and food and nutrition with options in dietetics and nutrition); and Food Science (with options in dairy foods management and food science). Baccalaureate degrees in Agricultural Engineering and Biological Systems Engineering are offered through the College of Engineering. See the departmental sections below for the programs of study leading to these degrees.

Graduate

Graduate study leading to the degree of Master of Science is offered in Applied Economics; Agricultural Education; Animal Science; Entomology; Family and Consumer Sciences; Food Science; Plant Science; and Soil and Land Resources. Graduate study leading to the degree of Doctor of Philosophy is offered in Animal Physiology; Entomology; Food Science, Plant Science; and Soil and Land Resources. Both M.S. and Ph.D. programs in Biological and Agricultural Engineering are offered through the College of Engineering. Students must fulfill the requirements of the College of Graduate Studies and the units in which they study.

Agricultural and Life Sciences Core

Code	Title	Hours
AGEC 278	Farm and Agribusiness Management	4
AGED 406	Exploring International Agriculture	3
AGED 451	Communicating in Agriculture	3
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
COMM 101	Fundamentals of Oral Communication	2
ECON 202	Principles of Microeconomics	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	

ENGL 318	Science Writing	
Total Hours		33-34

Department of Agricultural and Extension Education

James J. Connors, Dept. Chair (875 Perimeter Drive MS 2040; 1210 West 6th, 83844-2040; phone 208-885-6358; jconnors@uidaho.edu (ljconnors@uidaho.edu)***; www.uidaho.edu/cals/aee).***

The mission of the Department of Agricultural and Extension Education includes teaching, research, and service. The specific objectives of the department are:

1. to prepare educators for employment in teaching agriculture and extension programs
2. to provide service and direction to FFA in Idaho
3. to prepare for careers in general learning/ranching or entry level positions in agricultural industry and agribusiness
4. to provide an opportunity for graduate study in the areas of agricultural and extension education
5. to assist in providing in-service education for agricultural educators in Idaho
6. to provide service to related agencies and organizations for the support of education and the development of human resources
7. to conduct quality research in agricultural and extension education
8. to assist in maintaining viable agricultural education programs; and
9. to assist in the development of information and instructional materials for the support of agricultural educators and extension personnel.

Courses in animal science, agricultural economics, agricultural mechanics, entomological science, plant science, horticulture, and soil science will prepare graduates to teach these areas as secondary agriculture instructors or develop educational programs as county extension faculty. The agricultural education curriculum is approved by the State Board for Professional-Technical Education. Graduates who have completed a minimum of 28 credits in agricultural education and who meet the state certification requirements for a standard secondary teaching certificate are qualified to teach secondary agriculture. Government and agribusiness agencies that seek persons with training in agriculture and education provide employment opportunities for graduates of this curriculum. Courses provide students an opportunity to develop employment opportunities in teaching agriculture, cooperative extension, and agribusiness occupations.

The department provides opportunities for professional growth and development to agricultural educators through a planned program of graduate study. The pursuit of an M.S. degree allows for the development of problem-solving skills through scientific investigation of appropriate research topics. Graduate work in agricultural and extension education is offered with the opportunity for students to elect options in agricultural sciences, extension education, professional-technical teacher education, international agricultural education, or other areas that parallel their career goals. Because of the diversity of research efforts by departmental faculty members, a graduate student has a wide variety of specializations from which to choose a thesis topic. Students with this degree are well prepared to move into a job market or to pursue a Ph.D. program at another institution.

Admission to a graduate program requires an undergraduate degree with a major in agricultural education or a closely related field. The department may require the Graduate Record Examination if there is insufficient information available to indicate that the student will be successful in graduate work.

The department welcomes inquiries about its programs and suggests that anyone interested in possible pursuit of a degree in agricultural and extension education should contact the department (telephone 208-885-6358).

Majors

- Agricultural Education (B.S.Ag.Ed.) (p. 110)
- Agricultural Science, Communication and Leadership (B.S.Ag.L.S.) (p. 111)
- Agricultural and Life Sciences Core (p. 109)

Minors

- Agricultural Extension Education Minor (p. 111)
- Agricultural Communications and Leadership Minor (p. 112)

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Agricultural and Extension Education. See the College of Graduate Studies (p. 232) section for the general requirements applicable to the M.S. degree.

- Agricultural Education M.S. (p. 111)

Agricultural Education (B.S.Ag.Ed.)

This major is approved by the State Board of Professional-Technical Education for the preparation of high school agriculture instructors. Graduates who have completed at least 28 credits in agricultural education, and who meet the state certification requirements for a Standard Secondary Teaching Certificate, are eligible to teach secondary agricultural science and technology in Idaho. Students must be admitted to the Teacher Education Program, which requires a grade-point average of at least 2.75, before being allowed to enroll in upper-division teacher education courses and participate in student teaching. The Idaho teaching certificate transfers to most states in the US. In addition, government and business agencies and the Cooperative Extension System that seek persons with education in both agriculture and education provide employment opportunities for graduates of this curriculum.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and the following:

Code	Title	Hours
AGED 180	Introduction to Agricultural Education	1
AGED 258	Experiential Learning and SAE Programs	1
AGED 351	Career and Technical Education	3
AGED 358	Supervising FFA and SAE Programs	3
AGED 451	Communicating in Agriculture	3
AGED 452	Methods of Teaching Agriculture	4
AGED 453	Program Planning in Secondary Agricultural Education	3
AGED 454	Facilities Organization and Management	2

AGED 460	Practicum: Secondary School Teaching in Agriculture	10
AGED 461	Student Teaching Portfolio	2
AGED 470	Proseminar in Agricultural Education	1
AGED 471	Senior Capstone in Agricultural Education	1
ASM 107	Beginning Welding	2
ASM 202	Agricultural Shop Practices	2
ASM 210	Small Engines	2
ASM 407	Advanced Welding	1
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
COMM 101	Fundamentals of Oral Communication	2
ECON 202	Principles of Microeconomics	3
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
CHEM 101	Introduction to Chemistry	3
or CHEM 111	General Chemistry I	
CHEM 101L	Introduction to Chemistry Laboratory	1
or CHEM 111L	General Chemistry I Laboratory	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Electives (25 cr)		
Must include a minimum of:		
Agricultural Economics Electives		6
Animal Science Electives		6
Plant Science Electives		6
Horticulture Elective		3
Soils Elective		4
Total Hours		103-104

Courses to total 128 credits for this degree

Agricultural Education (M.S.)

Master of Science. Major in Agricultural Education.

Both thesis and non-thesis options are offered. The M.S. (non-thesis) is a terminal program designed to provide a broader preparation than the M.S. with thesis. Of the minimum of 30 credits required under the non-thesis option, at least 18 must be in courses at the 500s level and the remainder may include 400s level courses in the majors and 300s and 400s level courses in supporting areas. A professional paper is optional at the discretion of the candidate's supervisory committee. A comprehensive examination is required which may be written and/or oral.

Agricultural Extension Education Minor

Code	Title	Hours
AGED 180	Introduction to Agricultural Education	1
AGED 359	Developing 4-H Youth Programs	2
AGED 448	Foundations of Extension Education	2
AGED 450	Leading People and Teams	3
AGED 451	Communicating in Agriculture	3
AGED 498	Internship	6
Total Hours		17

Courses to total 18 credits for this minor

Agricultural Science, Communication and Leadership (B.S.Ag.L.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
Agricultural and Life Sciences Core (p. 109)		33-34
Agricultural Science, Communication and Leadership Courses		
ACCT 201	Introduction to Financial Accounting	3
AGEC 289	Agricultural Markets and Prices	3
AGED 180	Introduction to Agricultural Education	1
AGED 251	Principles of Agricultural Communications and Leadership	3
AGED 450	Leading People and Teams	3
AGED 498	Internship	5-10
Upper-Division Agricultural Economics Elective		3
Subject Area Electives		20
Select one of the following:		
10 credits in two of the following subject areas:		
Agricultural System Management (p. 399)		
Animal and Veterinary Science (p. 403)		
Entomology (p. 503)		
Family and Consumer Science (p. 513)		
Food Science (p. 524)		
Soils (p. 696)		
Plant Science/Rangeland Ecology Management (p. 663)		
OR 15 credits from one of the following subject areas AND 5 credits from a Foreign Language:		
Agricultural System Management (p. 399)		
Animal and Veterinary Science (p. 403)		
Entomology (p. 503)		
Family and Consumer Science (p. 513)		
Food Science (p. 524)		
Plant Science/Rangeland Ecology Management (p. 663)		
Soils (p. 696)		
Communication Electives		12
Select 12 credits of communication electives including one upper-division course:		

COMM 233	Interpersonal Communication	
COMM 332	Communication and the Small Group	
COMM 410	Conflict Management	
COMM 431	Applied Business and Professional Communication	
EDCI 410	Technology, Teaching and Learning	
JAMM 100	Media and Society	
JAMM 121	Media Writing	
JAMM 252	Introduction to Integrated Media Campaigns	
Leadership Electives		9
Select 9 credits of leadership electives:		
AGED 359	Developing 4-H Youth Programs	
AGED 448	Foundations of Extension Education	
MHR 311	Introduction to Management	
MHR 413	Organizational Behavior	
MHR 418	Managing Organization Design and Leading Changes	
NRS 311	Public Involvement in Natural Resource Management	
MS 101	Intro to the Army & Critical Thinking	
MS 102	Intro to the Profession of Arms	
MS 201	Foundations of Leadership I	
MS 202	Foundations of Leadership II	
Total Hours		95-101

Courses to total 120 credits for this degree

Agricultural Communications and Leadership Minor

Code	Title	Hours
AGED 251	Principles of Agricultural Communications and Leadership	3
AGED 301	Undergraduate Research	1-3
AGED 350	Leadership Event Coordination	1
AGED 450	Leading People and Teams	3
AGED 451	Communicating in Agriculture	3
AGED 406	Exploring International Agriculture	3
AGED 407	Global Agricultural & Life Sciences Systems	3
AGED 498	Internship (5 cr max)	1-10
Total Hours		18-29

Courses to total 20 credits for this minor

Department of Agricultural Economics and Rural Sociology

Christopher McIntosh, Dept. Head (39A Iddings Wing, Ag. Sc. Bldg. 83844-2334; phone 208-885-6264).

Agricultural economics is an applied branch of economics. It is a social science that deals with economic problems in agriculture, the food industry, rural communities, and the use and conservation of our natural resources. Economic principles and theories are used to determine maximum economic efficiency in the production and marketing of agricultural commodities and in the use of natural resources.

The Bachelor of Science program in Agricultural Economics prepares students to address problems faced by farmers and ranchers, agricultural marketing and supply companies, natural resource agencies, and rural communities. The department offers the B.S. degree in Agricultural Economics with two emphasis areas: Agribusiness and Applied Economics. Areas of study within the emphases include agricultural finance, agricultural policy, agricultural commodity risk management, marketing, farm and ranch management, rural community development, international trade and development, economic use of natural resources, and management of agribusiness firms. The department also offers two minors: Agribusiness and Natural Resource Economics.

The Agribusiness emphasis prepares students in the management functions of farms, ranches, and businesses involved with the production and marketing of farm commodities and farm production inputs. The Applied Economics emphasis prepares students to become professional economists for commercial agricultural firms and governmental agencies or to pursue advanced degrees in this field before entering the profession.

The M.S. in Applied Economics encompasses agribusiness, natural resources, and rural development economics. Agricultural development and international trade are also emphasized.

Students initiating graduate work in applied economics should have a background in economics and quantitative methods. The following specific course areas are recommended: economic principles, six credits; intermediate microeconomics, three credits; statistics, three credits; mathematics, through introductory calculus; applied economics and/or agricultural economics, nine credits. Individual graduate programs are tailored to allow students to take courses and develop thesis proposals in line with their professional interests.

The department welcomes inquiries about its program and suggests that anyone interested in possible pursuit of a degree in agricultural economics should contact the department (telephone 208-885-6264) or visit the website at www.uidaho.edu/cals/aers.

Majors

- Agricultural Economics (B.S.Ag.Econ.) (p. 113)

Minors

- Agribusiness Minor (p. 113)
- Natural Resource Economics Minor (p. 115)

Certificates

- Agricultural Commodity Risk Management Undergraduate Academic Certificate (p. 113)

Agricultural Economics and Rural Sociology Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Agricultural Economics and Rural Sociology. See the College of Graduate Studies (p. 232) section for the applicable general requirements.

- Agricultural Economics and Rural Sociology (M.S.) (p. 114)

Agribusiness Minor

Code	Title	Hours
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AGEC 356	Agricultural and Rural Policy	3
AGEC 301	Managerial Economics: Production	3
or AGEC 302	Managerial Economics: Consumption & Markets	
Select 7 credits of Upper-Division Agricultural Economics Electives		7
Total Hours		20

Courses to total 20 credits for this minor

Agricultural Commodity Risk Management Undergraduate Academic Certificate

Code	Title	Hours
Select two of the following:		6
AGEC 489	Understanding and Using Futures and Options Markets	
AGEC 414	Financial Analysis of Agricultural Firms	
AGEC 490	Commodity Price Analysis	
Select one of the following:		3
FIN 465	Introduction to Market Trading	
FIN 466	Market Trading Strategies	
AGEC 489	Understanding and Using Futures and Options Markets [1]	
or AGEC 414	Financial Analysis of Agricultural Firms	
or AGEC 490	Commodity Price Analysis	
Select at least 3 credits from the following:		3
AGEC 468	Risk Management: Commodity Merchandising	
AGEC 469	Risk Management: Commodity Trading	
AGEC 489L	Applied Commodity Market Analysis Lab	
FIN 467	Barker Capital Management Group	
FIN 468	Market Trading Lab	
Total Hours		12

Courses to total 12 credits for this certificate.

[1] AGEC 489, AGEC 414, or AGEC 490 may be taken for this elective if not taken as one of the first two required courses.

Agricultural Economics (B.S.Ag.Econ.)

The agricultural economics area has two programs designed to prepare students for careers in the agricultural economics profession. The agribusiness major provides students with training related to management, finance, and marketing in the agribusiness sector. The agricultural economics major provides students with the theory behind decisions concerning agricultural production, marketing, resource use, pricing, and policy. Both of these majors prepare students to pursue advanced degrees if they choose.

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
AGEC 101	The Business of Agriculture	1
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AGEC 301	Managerial Economics: Production	3
AGEC 302	Managerial Economics: Consumption & Markets	3
AGEC 356	Agricultural and Rural Policy	3
AGEC 478	Advanced Agribusiness Management	3
AGEC 481	Agricultural Markets in a Global Economy	3
COMM 101	Fundamentals of Oral Communication	2
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
STAT 251	Statistical Methods	3
Select one of the following:		4-5
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Emphasis		
Select one of the following Emphases:		42-43
Applied Economics (p. 113)		
Agribusiness (p. 114)		
Total Hours		86-88

A. Applied Economics Emphasis

Code	Title	Hours
AGEC 451	Applied Environmental and Natural Resource Economics	3
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
ECON 453	Econometrics	3
ENGL 317	Technical Writing	3
MATH 170	Calculus I	4
Economics/Math/Statistics Electives		
Select three courses from the following:		9
ECON 343	Money and Banking	
ECON 407	Public Finance	
ECON 441	Labor Economics	
ECON 446	International Economics	
ECON 447	International Development Economics	
MATH 330	Linear Algebra	
STAT 431	Statistical Analysis	
or other 300 or 400 level Economics Courses by persmission		
Agricultural Economics Electives		
Select 3 credits of Agriculture Economics Electives		3
Technical Agriculture Electives		

Select 12 credits of Technical Agriculture Electives	12
Total Hours	43

Courses to total 120 credits for this degree

B. Agribusiness Emphasis

Code	Title	Hours
ACCT 482	Enterprise Accounting	3
AGEC 451	Applied Environmental and Natural Resource Economics	3
or AGEC 477	Law, Ethics and the Environment	
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
Select two of the following:		6
AGEC 333	Introduction to Sales	
BLAW 265	Legal Environment of Business	
MKTG 321	Marketing	
MHR 413	Organizational Behavior	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Business or Economics Electives		
Select 12 credits of Agricultural Economics, Economics, Accounting, or Business Electives:		12
Technical Agriculture Electives		
Select 12 credits of Technical Agriculture Electives:		12
Total Hours		42-43

Courses to total 120 credits for this degree

Agricultural Economics and Rural Sociology (M.S.)

Master of Science. Major in Applied Economics.

The M.S. program in applied economics is designed to prepare students for management, research, and policy positions in the public and private sectors of the economy, and for further graduate study.

The M.S. thesis option is offered as a 32 credit stand-alone degree or as a 32 credit thesis degree with optional emphasis area(s). The minimum of 32 required credits can be satisfied by taking a combination of 500 and 400 level courses, with at least 18 credits at 500 level, plus no more than 3 credits of 300 level courses in supporting areas.

An emphasis may be selected in any of the following three areas: Agricultural Economics; Natural Resources; Agribusiness.Both thesis options include six letter graded thesis credits (AGEC 500) and 26 credits of course work including the following:

Code	Title	Hours
AGEC 506	Faculty Seminar Series	0
AGEC 525	Master's Econometrics	3
AGEC 526	Master's Microeconomics Analysis	3
AGEC 527	Mathematics for Economists	3
AGEC 529	Research Methods (Max 2 credits)	1-2
AGEC Electives		15
Total Hours		25-26

A student has the option to not pursue an emphasis in which case the student must complete as part of the 15 credits of AGEC electives, 9 credits chosen from the following courses:

Code	Title	Hours
AGEC 532	Natural Resource Economics and Policy	3
AGEC 533	International Trade and Policy	3
AGEC 534	Production Economics	3
AGEC 535	Applied Industrial Organization	3
AGEC 586	Regional Economic Development Theory	3
AGEC 587	Regional Economic Development Methods	3
Total Hours		18

If an emphasis area is chosen, two courses must be selected from those specifically listed in that emphasis area, which will be used as part of the 15 credits of AGEC electives. Emphasis areas are:

Agribusiness

Code	Title	Hours
AGEC 535	Applied Industrial Organization	3
AGEC 533	International Trade and Policy	3
AGEC 534	Production Economics	3
Total Hours		9

Agricultural Economics

Code	Title	Hours
AGEC 534	Production Economics	3
AGEC 535	Applied Industrial Organization	3
Total Hours		6

Natural Resources

Code	Title	Hours
AGEC 532	Natural Resource Economics and Policy	3
Select one additional course:		3
Total Hours		6

More than one emphasis area may be completed as long as each emphasis area requirement is met. However only the declared emphasis area will appear on the student's transcript.

Students may take a non-thesis option M.S. degree. Under this option a student will take a minimum of 32 credits of course work including the 26 credits of departmental course requirements, which are the same as the stand-alone thesis option. For the non-thesis option, a three-credit paper will be written and presented by the student addressing a topic determined jointly by the student and the student's graduate committee. This option is only available for students not receiving financial support from research funds.

Natural Resource Economics Minor

Code	Title	Hours
AGEC 356	Agricultural and Rural Policy	3
AGEC 451	Applied Environmental and Natural Resource Economics	3
AGEC 477	Law, Ethics and the Environment	3
AGEC 301	Managerial Economics: Production	3
or AGEC 302	Managerial Economics: Consumption & Markets	
Electives		
Select 8 credits from the following courses (if not already above):		8
AGEC 301	Managerial Economics: Production	
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 410	Experiencing the Idaho Public Policy Making Process	
AGEC 419	Development and Analysis of Enterprise Budgets	
ECON 202	Principles of Microeconomics	
ECON 385	Environmental Economics	
ENVS 225	International Environmental Issues Seminar	
ENVS 400	Seminar	
GEOG 411	Natural Hazards and Society	
NRS 235	Society and Natural Resources	
NRS 364	Politics of the Environment	
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 462	Natural Resource Policy	
REM 456	Integrated Rangeland Management	
Total Hours		20

Courses to total 20 credits for this minor

Department of Animal and Veterinary Science

Amin Ahmadzaheh, Interim Dept. Head (213 Ag. Sc. Bldg. 83844-2330; phone 208-885-6345).

Animal agriculture has a major role in providing the supply of high quality food, not only for the people of the United States, but also for those of other nations. Food and fiber obtained from animals include meat, milk, eggs, wool, and many by-products. Knowledge and skills resulting from a college education in this field will permit the graduate to contribute to improved production and health of the nation's livestock including beef, sheep, dairy, swine, poultry, horses, and companion animals.

In addition to classrooms and laboratories located in the Agricultural Science Building, the department's facilities include production centers for dairy, beef, and sheep, as well as a meats laboratory and livestock judging pavilion. Several breeds of animals are maintained for instructional purposes. The academic program is designed to prepare students for a variety of important and rewarding career opportunities. For more specific information, get in touch with the department head (208-885-6345).

To prepare students for the varied types of occupations available in animal agriculture, the Department of Animal and Veterinary Science offers a Bachelor of Science degree in animal and veterinary science with four options: business, dairy science, production and science/preveterinary. Each of these majors, while attempting to provide the students with a sound background in animal biology, has its separate emphasis on complementary academic training. One of the strongest features of these programs is the flexibility provided. Each major permits the student to plan the precise course of study that will best prepare him or her for the area of work that he or she desires to enter. The department also offers a minor in animal science for students desiring a background in animal agriculture to complement their major field of study.

The B.S.A.V.S. business option is designed for students who desire a career as entry level into management positions in livestock-related industries. This option is oriented toward business, economics, and agricultural economics, in addition to a sound background in production animal agriculture. With appropriate choices of elective courses, students can also prepare themselves for positions with financial institutions involved with the animal agriculture industry.

An option in dairy science (B.S.A.V.S.) helps prepare students for careers in one of Idaho's fastest growing industries. This option offers introductory and advanced course work and "hands on training" at a modern dairy center. Specific courses are taught in dairy nutrition, forage crops, dairy reproduction and physiology, dairy cattle evaluation, dairy products and processing, physiology of lactation, herd health management, agriculture power and machines, and farm management. Students are eligible to participate in the cooperative of university dairy students (CUDS) program.

The option in production (B.S.A.V.S.) is designed for students who desire to pursue a career in livestock production, graduate work in one of the varied disciplines in animal sciences (nutrition, breeding, physiology, growth, endocrinology, meats, etc.), or for employment by companies that require intensive training in animal biology. This option is also excellent training for those interested in Cooperative Extension.

The science/pre-veterinary option (B.S.A.V.S.) is offered for students interested in veterinary school or a graduate program involving any of the disciplines of animal biology. It is typically a 4-yr program of study, but for a few students the 3+1 program will be of interest. If, after successful completion of 99 credits of required courses (first 3 years of the 4-yr program, the student is admitted to a recognized college of veterinary medicine and completes the first year of veterinary school (equivalent of at least 32 credits), that first year will constitute the senior year at UI and the student will be awarded a B.S. A.V.S. at UI.

The department offers a graduate program leading to the Master of Science degree with a major in animal science and a Doctor of Philosophy degree with a major in animal physiology. The department offers areas of specialization in nutrition, reproductive physiology, embryo physiology, animal growth and development, meat science, and animal diseases with orientation towards beef cattle, dairy cattle, horses, sheep, and fish. The department also participates in university interdisciplinary programs in reproductive biology, and molecular and agricultural genetic engineering.

Graduate work in the department is designed to prepare the student for work in research, extension, teaching, and industry. Thesis projects are diverse in scope and range in design from studying very fundamental biological questions to application of scientific knowledge to animal production and management. Facilities available for graduate student research include herds and flocks of major livestock breeds, ruminant nutrition and physiology laboratories, biomedical research laboratories, a university-operated dairy, meat science laboratory, and a 500-head

experimental feedlot. Active cooperation is maintained with federal research agencies located on and off campus.

Graduate student assistantships are available on a competitive basis each year. Inquiries should be directed to the department's graduate program coordinator.

Majors

- Animal Veterinary Science (B.S.A.V.S.) (p. 116)

Minors

- Animal Science Minor (p. 118)

Animal and Veterinary Science Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Animal and Veterinary Science. See the College of Graduate Studies (p. 232) section for the general requirements applicable to all degrees.

- Animal and Veterinary Science (M.S.) (p. 118)
- Animal and Veterinary Science (Ph.D.) (p. 118)

Animal and Veterinary Science (B.S.A.V.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and completion of one of the following four options:

Code	Title	Hours
AVS 109	The Science of Animals that Serve Humanity	4
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
AVS 305	Animal Nutrition	4
AVS 371 & AVS 373	Anatomy and Physiology and Anatomy and Physiology Lab	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
COMM 101	Fundamentals of Oral Communication	2
STAT 251	Statistical Methods	3
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following options:		27-65
Business (p. 116)		
Dairy Science (p. 116)		
Production (p. 117)		
Science/Preveterinary (p. 117)		
Total Hours		58-97

A. Business Option

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AVS 306	Feeds and Ration Formulation	4
AVS 363	Animal Products for Human Consumption	4
AVS 450	Issues in Animal Agriculture	2
BLAW 265	Legal Environment of Business	3
CHEM 275	Carbon Compounds	3
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
AGEC 301	Managerial Economics: Production	3
or AGEC 302	Managerial Economics: Consumption & Markets	
AVS 222	Animal Reproduction and Breeding	3-4
or AVS 452	Physiology of Reproduction	
CHEM 101	Introduction to Chemistry	3
or CHEM 111	General Chemistry I	
CHEM 101L	Introduction to Chemistry Laboratory	1
or CHEM 111L	General Chemistry I Laboratory	
AVS 472	Dairy Cattle Management	3
or AVS 474	Beef Cattle Science	
Select 6 credits of Business Electives		6
Select 6 credits of Upper Division Agricultural Economics		6
Select one of the following:		3
AVS 466	Equine Science and Management	
AVS 472	Dairy Cattle Management	
AVS 474	Beef Cattle Science	
AVS 476	Sheep Science	
Total Hours		63-64

Courses to total 120 credits for this degree

B. Dairy Science Option

Code	Title	Hours
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AVS 172	Principles and Practices of Dairy Science	2
AVS 306	Feeds and Ration Formulation	4
AVS 330	Genetics of Livestock Improvement	3
AVS 363	Animal Products for Human Consumption	4
AVS 411	Ruminant Nutrition	3
AVS 450	Issues in Animal Agriculture	2
AVS 463	Growth and Lactation	3
AVS 471	Animal Disease Management	3
AVS 472	Dairy Cattle Management	3
AVS 475	Advanced Dairy Management	3
CHEM 275	Carbon Compounds	3
ECON 202	Principles of Microeconomics	3
AVS 222	Animal Reproduction and Breeding	3-4
or AVS 452	Physiology of Reproduction	

CHEM 101	Introduction to Chemistry	3
or CHEM 111	General Chemistry I	
CHEM 101L	Introduction to Chemistry Laboratory	1
or CHEM 111L	General Chemistry I Laboratory	
EPPN 154	Microbiology and the World Around Us	3
or BIOL 250	General Microbiology	
EPPN 155	Microbiology and the World Around Us: Laboratory	1
or BIOL 255	General Microbiology Lab	
Total Hours		54-55

Courses to total 120 credits for this degree

C. Production Option

Code	Title	Hours
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AVS 306	Feeds and Ration Formulation	4
AVS 330	Genetics of Livestock Improvement	3
AVS 363	Animal Products for Human Consumption	4
AVS 411	Ruminant Nutrition	3
AVS 450	Issues in Animal Agriculture	2
AVS 471	Animal Disease Management	3
CHEM 275	Carbon Compounds	3
ECON 202	Principles of Microeconomics	3
REM 151	Rangeland Principles	3
AVS 222	Animal Reproduction and Breeding	3-4
or AVS 452	Physiology of Reproduction	
CHEM 101	Introduction to Chemistry	3
or CHEM 111	General Chemistry I	
CHEM 101L	Introduction to Chemistry Laboratory	1
or CHEM 111L	General Chemistry I Laboratory	
EPPN 154	Microbiology and the World Around Us	3
or BIOL 250	General Microbiology	
EPPN 155	Microbiology and the World Around Us: Laboratory	1-2
or BIOL 255	General Microbiology Lab	
AVS 472	Dairy Cattle Management	3
or AVS 474	Beef Cattle Science	
Select a 300 or 400 level Life Science Elective from one of the following subjects:		3
BIOL (p. 428)		
ENT (p. 503)		
FISH (p. 521)		
PLSC (p. 663)		
REM (p. 679)		
SOIL (p. 696)		
WLF (p. 713)		
Select one of the following:		3
AVS 466	Equine Science and Management	
AVS 472	Dairy Cattle Management	
AVS 474	Beef Cattle Science	
AVS 476	Sheep Science	
Total Hours		55-57

Courses to total 120 credits for this degree

D. Science/Preveterinary Option

Code	Title	Hours
AVS 452	Physiology of Reproduction	4
BIOL 114	Organisms and Environments	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
EPPN 154	Microbiology and the World Around Us	3
or BIOL 250	General Microbiology	
EPPN 155	Microbiology and the World Around Us: Laboratory	1-2
or BIOL 255	General Microbiology Lab	
BIOL 300	Survey of Biochemistry	3-4
or BIOL 380	Biochemistry I	
Select one of the following:		3-4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	
GENE 314	General Genetics	
First Year in Veterinary School (32 credits) or the following courses		
AVS 306	Feeds and Ration Formulation	4
AVS 330	Genetics of Livestock Improvement	3
AVS 450	Issues in Animal Agriculture	2
AVS 471	Animal Disease Management	3
Select one of the following:		3
AVS 411	Ruminant Nutrition	
AVS 463	Growth and Lactation	
AVS 475	Advanced Dairy Management	
BIOL 432	Immunology	
BIOL 447	Virology	
BIOL 474	Developmental Biology	
BIOL 483	Mammalogy	
CHEM 372	Organic Chemistry II	
AVS 472	Dairy Cattle Management	3
or AVS 474	Beef Cattle Science	
Select one of the following:		3
AVS 466	Equine Science and Management	
AVS 472	Dairy Cattle Management	
AVS 474	Beef Cattle Science	
AVS 476	Sheep Science	
Total Hours		60-63

Courses to total 120 credits for this degree

Animal and Veterinary Science (M.S)

Master of Science. Major in Animal Science

The M.S. degree may be earned in animal science. To qualify for full admission, candidates must fulfill the requirements of the Graduate College and have an overall grade-point average of 3.0 or better (4.0 scale) for their undergraduate study. Acceptance of students not having this minimum grade-point average is possible, subject to recommendation by the department's Graduate Committee. Applicants must submit scores received on the Graduate Record Examination general (aptitude) test.

The M.S. degree requires a minimum of 30 credits, at least 18 of which must be in courses numbered 500 and above. No more than 10 of the 500-level credits may be from research and thesis. Courses at the 300 level in supporting fields may be used as part of the M.S. degree program. All graduate students are required to complete the departmental graduate seminar twice during the degree program. Students are also required to assist with teaching during their graduate training.

Applicants for the M.S. degree program in animal science who have completed their undergraduate program in fields that are not closely related to animal science will be required to complete deficiency courses as determined by the candidate's committee and approved by the department's Graduate Committee. The following are considered essential in an applicant's undergraduate program: chemistry and biochemistry (minimum of 12 credits); calculus; animal nutrition; animal breeding; physiology and/or endocrinology; one products course; and one animal production and management course. Specific animal production courses may be required as determined on an individual candidate basis.

Animal and Veterinary Science (Ph.D.)

Doctor of Philosophy. Major in Animal Physiology

To qualify for admission, candidates must fulfill the requirements of the Graduate College and have an overall grade-point average of 3.25 or better (on a 4.00 scale) for their undergraduate and graduate work. Applicants must submit scores received in the Graduate Record Examination (aptitude test).

Applicants who have completed their previous degrees in fields not closely related to animal and veterinary science may be required to complete deficiencies as determined by the candidate's committee and approved by the department's Graduate Committee.

The Ph.D. degree in animal physiology requires a minimum of 78 credits beyond the B.S. or professional degree, at least 52 credits of which must be in courses numbered 500 and above. Thirty-nine credits of the 78 must be in courses other than AVS 600. Courses at the 300 level may not be used as part of the Ph.D. degree program. Doctoral students are required to complete the departmental graduate seminar each semester it is offered during the degree program. Students are also required to assist with teaching during their graduate training. Doctoral students must demonstrate competence in experimental design and data analysis prior to completion of the degree.

Animal Science Minor

Code	Title	Hours
AVS 109	The Science of Animals that Serve Humanity	4
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
AVS 222	Animal Reproduction and Breeding	3-4
or AVS 452	Physiology of Reproduction	
Select 6 credits from the following:		6
AVS 305	Animal Nutrition	
AVS 306	Feeds and Ration Formulation	
AVS 330	Genetics of Livestock Improvement	
AVS 363	Animal Products for Human Consumption	
AVS 411	Ruminant Nutrition	
AVS 471	Animal Disease Management	
Select 3 credits from the following:		3
AVS 466	Equine Science and Management	
AVS 472	Dairy Cattle Management	
AVS 474	Beef Cattle Science	
AVS 476	Sheep Science	
Total Hours		20-21

Courses to total 20-21 credits for this minor

Department of Entomology, Plant Pathology and Nematology

Edwin Lewis, Department Head (Agricultural Science Bldg. Room 242, 875 Perimeter Drive MS 2329, Moscow, ID 83844-2329; phone 208-885-6277).

The Department of Entomology, Plant Pathology and Nematology (EPPN) supports the Land Grant mission of the University of Idaho through our statewide programs of teaching, research and extension about insects and their relatives, plant pathogens and diseases, and nematodes. EPPN faculty include two of the fourteen University Distinguished Professors, an honorific rank reserved for those Professors whose internationally recognized excellence has brought greatest distinction to the University of Idaho.

Our undergraduate teaching program leads to a Bachelor of Science in Agricultural and Life Sciences with a Major in Entomology. We are unique among all universities in the Pacific Northwest and Intermountain West in offering a B.S. degree with a Major in Entomology. Our curriculum prepares students for immediate professional careers that preserve environmental quality and that protect food, people, animals and property. Faculty offer Directed Study, Special Topics and Seminar classes that allow for career specialization and for future advanced education at the graduate level. Students can gain research experience outside the classroom by working with EPPN faculty located on campus in Moscow and off-campus at University of Idaho Research and Extension Centers located at Aberdeen, Kimberly and Parma, Idaho. Opportunities include internships at the William F. Barr Entomological Museum, one of the most significant scholarly resources for insect species diversity in the Pacific Northwest with its collection of more than one million insect specimens. For a personal tour of the Museum, contact Dr. Luc Leblanc, Curator, lleblanc@uidaho.edu.

We offer graduate programs leading to a Master of Science and Doctor of Philosophy with a Major in Entomology and a Major in Plant Pathology. Entomology faculty expertise is especially strong in interdisciplinary research approaches to arthropod-borne infectious agents, biological control, climate change and agriculture, host-plant resistance, insect behavior, insect chemical ecology, integrated pest management, and parasitology. Our graduates go on to research, teaching, extension and consulting careers in academia, industry and small business. For more information about the Entomology Major, contact Professor Mark Schwarzländer, Director of EPPN Graduate Studies, markschw@uidaho.edu. For more information about the Plant Pathology Major, contact Professor Brenda Schroeder, bschroeder@uidaho.edu.

EPPN multidisciplinary research programs advance the fundamental science of our disciplines while contributing to the solution of real-world problems about food systems, environmental quality and human health. Faculty research last year was funded by more than $12.3 million in new and continuing competitively awarded grants by national and state agencies. Our statewide Extension outreach programs improve the lives of Idahoans and advance the public good by extending research-based knowledge for practical implementation around the home and farm. Approximately 9,100 people learned about insects, plant pathogens and nematodes at 200 on-site workshops, field days, seminars and other outreach events delivered across Idaho by EPPN faculty last year; our printed and online Extension publications reached 10,000's homeowners and their families as well as commercial producers of agronomic field crops, horticultural food crops and landscape plants.

Majors

- Entomology (B.S.Ag.L.S.) (p. 119)
- Agricultural and Life Sciences Core (p. 109)

Minors

- Entomology Minor (p. 120)
- Plant Protection Minor (p. 120)

Entomology, Plant Pathology and Nematology Graduate Programs

- Entomology (M.S.) (p. 119)
- Entomology (Ph.D.) (p. 120)

Entomology (B.S.Ag.L.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
Agricultural and Life Sciences Core (p. 109)		33-34
Entomology Courses		
BIOL 114	Organisms and Environments	4
BIOL 213 or PLSC 205	Principles of Biological Structure and Function General Botany	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 275 or CHEM 277	Carbon Compounds Organic Chemistry I	3
ENT 322	General and Applied Entomology	4
ENT 438	Pesticides in the Environment	3
ENT 440	Insect Identification	4
ENT 441	Insect Ecology	3
PLP 415 or SOIL 425	Plant Pathology Microbial Ecology	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 207	Introduction to Biotechnology	3
PLSC 400	Seminar	1
Select 3 credits of Biotechnology electives		3
Select 5 credits of Entomology electives		5
Select 6 credits of Life Science electives		6
Select 4 credits of Mathematics electives		4
Select 4 credits of Physics electives		4
Select one of the following:		3-5
BIOL 154 & BIOL 155	Introductory Microbiology and Introductory Microbiology Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
BIOL 300	Survey of Biochemistry	
BIOL 380	Biochemistry I	
CHEM 253 & CHEM 254	Quantitative Analysis and Quantitative Analysis: Lab	
Select one of the following:		3-4
BIOL 310	Genetics	
BIOL 315	Genetics Lab	
GENE 314	General Genetics	
Total Hours		109-113

Courses to total 128 credits for this degree

Entomology (M.S)

Master of Science. Major in Entomology. (Thesis Option)

Admission to graduate programs in entomology requires an undergraduate degree, usually in some field of biology. Specific requirements for each degree are determined by the student's graduate committee. Candidates for the M.S. with zoology or entomology course deficiencies in their undergraduate program may be required to list those courses as deficiencies on their M.S. program.

Master of Science. Major in Entomology. (Non-thesis Option)

Admission to graduate programs in entomology requires an undergraduate degree, usually in some field of biology. Specific requirements for each degree are determined by the student's graduate committee. Candidates for the M.S. with zoology or entomology course deficiencies in their undergraduate program may be required to list those courses as deficiencies on their M.S. program.

Entomology (Ph.D.)

Doctor of Philosophy. Major in Entomology.

University Ph.D. requirements apply. Additional specific requirements are determined by the student's graduate committee.

Entomology Minor

Code	Title	Hours
ENT 322	General and Applied Entomology	4
Select 16 credits of Entomology electives		16
Total Hours		20

Courses to total 20 credits for this minor

Plant Pathology (M.S.)

Master of Science. Major in Plant Pathology.

Code	Title	Hours
PLP 515	Plant Pathology	3
PLP 516	Plant Pathology Lab	1
PLP 511	Viruses and Virus Diseases of Plants	4
PLP 522	Plant Bacteriology	3
PLP 501	Seminar	2
PLP 502	Directed Study [1]	3
Select one course in applied entomology		2-3
Total Hours		18-19

[1] Three credits of PLP Directed Study (PLP 502) are required and can be delivered by any member of the EPPN faculty. Credits earned in other Plant Pathology courses earned in another school or through correspondence study may be substituted for directed study credits.

Plant Protection Minor

Code	Title	Hours
ENT 322	General and Applied Entomology	4
PLP 415	Plant Pathology	3
PLSC 338	Weed Control	4
Nine credits in ENT, PLP, or PLSC:		9
Suggested Courses		
PLSC 410	Invasive Plant Biology	
PLSC 438	Pesticides in the Environment	
ENT Electives (p. 503)		
PLP Electives (p. 662)		
PLSC Electives (p. 663)		
Total Hours		20

Courses to total 20 credits for this minor

Margaret Ritchie School of Family and Consumer Sciences

Michelle (Shelley) McGuire, Dept Head (105 Mary Hall Niccolls Family and Consumer Sciences Bldg. 83844-3183; phone 208-885-6546; famcon@uidaho.edu).

Family and consumer sciences focuses on the relationships, resources, and services contributing to individual and family well-being. The discipline analyzes the needs of individuals and families using social, psychological, physical, biological, economic, and aesthetic theories and concepts.

Three majors leading to the degree of Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.) are offered by the School of Family and Consumer Sciences and are designed to meet professional and individual goals of students. These are:

1. Child, Family, and Consumer Studies,
2. Food and Nutrition, and
3. Apparel, Textiles and Design.

Students may choose one of three program options in the child, family, and consumer studies major. Child and Youth Development relations focuses on the normal, healthy development of children and families. Family Life offers a general preparation in Family and Consumer Sciences that provides a foundation for further specialization.

The Food and Nutrition major offers the Dietetics and Nutrition options. The Coordinated Program in Dietetics includes a senior year experience in Spokane where students complete a supervised practicum in community and medical center settings. This program is accredited by the Commission on Accreditation for Dietetics Education (CADE) of the American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606, 312-899-0040, ext. 5400. After successful completion of the program, students can take the national registration exam to become Registered Dietitians. The nutrition option prepares students for careers with government agencies, commodity groups, health and fitness agencies and businesses, and some components of the food industry. In addition, the course work would provide excellent background for those wishing to pursue advanced degrees in medicine or nutrition. The first two years of courses are very similar in these two options. Students apply for acceptance into the Coordinated Program in Dietetics at the end of the sophomore year.

The Apparel, Textiles and Design major offers both apparel design and fashion merchandising emphases. Combining courses from art or business with the clothing, textile, and design courses offered in the school prepares students for careers in retail and wholesale sectors of the apparel and textile industries. Designers, product development specialists, retail buyers and managers, and merchandise managers are some of the career titles held by UI graduates.

Apparel, Textiles and Design Program Outcomes

Foundations

- Understand the global nature and scope of the industry and related sectors, including but not limited to design, production, buying and merchandising, and distribution.

- Focus on fibers and textile materials and specifications relative to serviceability, quality, performance, and cost.
- Understand and apply knowledge about key concepts such as target market, product development, the consumer, and the roles and functions of various contexts in which products are developed and consumed.

Product Development

- Identify and interpret needs and wants of consumers and how industry processes are applied to plan, develop, produce, communicate, and sell profitable product lines.
- Relate the elements and principles of design to product development, use, and evaluation and use the design process to create products that meet marketplace needs.
- Demonstrate critical and creative thinking skills, and creative problem-solving skills, including the ability to critically evaluate and compare diverse perspectives.
- Communicate ideas in written, verbal, and visual forms using appropriate technology.
- Evaluate product quality, serviceability, and regulatory standards.

Understanding the Consumer

- Understand, communicate and apply knowledge and research regarding appearance and human behavior, and about the complex nature of consumer behavior as it relates to aesthetic preferences, economic and purchasing decisions, and social, historical, and cultural factors.
- Understand the concept of dress (as all of the supplements and modifications to the body) and its role as it reflects and shapes intra and inter-cultural and social interactions.
- Apply knowledge about the interrelationships among historic and socio-cultural factors of dress and their impact on human behavior, including the effects of life stages, change across time, and culture.

Career Development and Professional Skills

- Identify and evaluate issues of social responsibility, professional behavior, sustainability and ethics related to the impact of individual, organizational, and corporate decision-making.
- Demonstrate the necessary skills for industry careers, including creativity, teamwork, attitude, ethics, goal setting, and career development.
- Function as team members and leaders within professional and culturally diverse environments.
- Apply concepts and integrate knowledge through practical learning experiences in meaningful workplace settings and various industry contexts.

The Bachelor of Science in Early Childhood Development and Education (p. 173) is offered jointly between the College of Education (p. 170) and the School of Family and Consumer Sciences. Coursework will prepare students to be recommended for Idaho Early Childhood Education/Early Childhood Special Education (ECE/ECSE) Blended Teacher Certification. Students will be certified to teach children birth through grade three.

The Margaret Ritchie School of Family and Consumer Sciences offers graduate course work and research opportunities concerning individuals and families across their life spans. An integrated approach prepares students for the complexities of our global society through the analysis and application of relevant theories, practices, and research. Issues important to individuals and families, such as human development, consumption, resource management, education, aesthetics, and public policy, are studied in the context of cultural and physical environments.

Graduate students apply communication, analytical, evaluation, and synthesis skills to the study of families and consumers through classroom, practica, and research experiences. The school's Child Development Laboratory provides a special resource for both teaching and research activities. Internships in community agencies and business, practica in teaching and supervision, and graduate teaching and research assistantships also provide valuable graduate student experiences. Graduate student research is closely aligned with faculty interests that currently include work and family, quality child care, feeding young children, at-risk youth, financial management through the life span, sports nutrition, family and consumer sciences education, international textile trade patterns, and cultural aspects of dress. The program prepares students to be teachers in the public schools and community colleges; child or human development specialists in public and private organizations such as nonprofit and social services agencies, hospitals, child care centers, and the extension system; and for the future pursuit of the Ph.D. degree in family and consumer sciences, social work, education, or related fields.

The Margaret Ritchie School of Family and Consumer Sciences has an outstanding scholarship program for entering first-year students, continuing undergraduate majors, and graduate students. Most scholarships are awarded on the basis of academic excellence regardless of financial need.

Majors

- Apparel, Textiles and Design (B.S.F.C.S.) (p. 121)
- Child, Family, and Consumer Studies (B.S.F.C.S.) (p. 122)
- Early Childhood Development and Education (B.S.Erly.Chldhd.Dev.Ed.) (p. 123)
- Food and Nutrition (B.S.F.C.S.) (p. 124)

Family and Consumer Sciences Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the School of Family and Consumer Sciences. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Family and Consumer Sciences (M.S.) (p. 124)

Apparel, Textiles and Design (B.S.F.C.S.)

This major considers apparel, textiles and design as basic human needs, consumer products, historical and cultural artifacts, and communication tools. Students who wish to graduate in Apparel, Textiles and Design (ATD) must earn a grade of "C" or higher in all required ATD coursework, including Area of Focus courses.

Students are required to complete an advisor-approved focus area of 18 credits. Students select their focus area at the end of their Sophomore year. Standard program focus areas are Design, Marketing/Merchandising, and Product Development. Students may choose a related focus area by submitting a proposal to ATD Faculty clearly showing the relationship between Apparel, Textiles and Design and

their proposed area of focus relative to the industry, career goals, and emerging opportunities. Other focus areas may include Costume Design, Advertising, Business, or International Studies. Upon approval a double major or minor could also be used instead as long as the other content area is relative to Apparel, Textiles and Design.

Apparel, Textiles and Design Program Outcomes

Foundations

- Understand the global nature and scope of the industry and related sectors, including but not limited to design, production, buying and merchandising, and distribution.
- Focus on fibers and textile materials and specification relative to serviceability, quality, performance, and cost.
- Understand an apply knowledge about key concepts such as target market, product development, the consumer, and the roles and functions of various contexts in which products are developed and consumed.

Product Development

- Identify and interpret needs and wants of consumers and how industry processes are applied to plan, develop, produce, communicate, and sell profitable product lines.
- Relate the elements and principles of design to product development, use, and evaluation and use the design process to create products that meet marketplace needs.
- Demonstrate critical and creative thinking skills, and creative problem-solving skills, including the ability to critically evaluate and compare diverse perspectives.
- Communicate ideas in written, verbal, and visual forms using appropriate technology.
- Evaluate product quality, serviceability, and regulatory standards.

Understanding the Consumer

- Understand, communicate and apply knowledge and research regarding appearance and human behavior, and about the complex nature of consumer behavior as it relates to aesthetic preferences, economic and purchasing decisions, and social, historical, and cultural factors.
- Understand the concept of dress (as all of the supplements and modifications to the body) and its role as it reflects and shapes intra- and inter-cultural and social interactions.
- Apply knowledge about the interrelationships among historic and socio-cultural factors of dress and their impact on human behavior, including the effects of life stages, change across time, and culture.

Career Development and Professional Skills

- Identify and evaluate issues of social responsibility, professional behavior, sustainability and ethics related to the impact of individual, organizational, and corporate decision-making.
- Demonstrate the necessary skills for industry careers, including creativity, teamwork, attitude, ethics, goal setting, and career development.
- Function as team members and leaders within professional and culturally diverse environments.
- Apply concepts and integrate knowledge through practical learning experiences in meaningful workplace settings and various industry contexts.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ART 100	World Art and Culture	3
MKTG 321	Marketing	3
FCS 105	Individual and Family Development	3
FCS 119	Introduction to Fashion and the Apparel Industry	3
FCS 123	Textiles	3
FCS 219	Digital Illustration for the Apparel Industry	3
FCS 224	Apparel Construction and Assembly Processes	3
FCS 295	Career Development in Apparel & Textiles	1
FCS 323	Apparel Product Development	3
FCS 324	Patternmaking	4
FCS 329	History of Western Dress	3
FCS 419	Dress and Culture	3
FCS 424	Senior Experience: Apparel Design	4
FCS 432	Apparel Promotion and Merchandising	3
FCS 448	Consumer Economic Issues	3
FCS 494	Portfolio Development	3
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
PSYC 101	Introduction to Psychology	3
or SOC 101	Introduction to Sociology	
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one of the following:		3
PSYC 320	Introduction to Social Psychology	
SOC 340	Social Change & Globalization	
Select 3 credits of Anthropology electives		3
Select an area of focus with the guidance of an advisor		18
Total Hours		81-82

Courses to total 120 credits for this degree

Child, Family, and Consumer Studies (B.S.F.C.S.)

Family and Consumer Sciences Undergraduate Curricular Requirements

This major has an interdisciplinary focus on the individual and family development, the family as an institution, and individuals and families as consumers in the market place.

The minimum credits required for graduation are 128, including at least 36 credits at the 300-level or above. Required course work includes the university requirements (see regulation J-3 (http://uidaho.smartcatalogiq.com/en/2017-2018/University-of-Idaho-General-Catalog/General-Requirements-and-Academic-Procedures/J-General-Requirements-for-Baccalaureate-Degrees)), completion of the C.F.C.S. core courses and one of the designated emphasis areas below. Students who wish to graduate in Child, Family, and Consumer Sciences (CFCS) must earn a grade of "C" or higher in all required CFCS coursework.

Students are encouraged to declare a minor (i.e. Aging Studies, Women's, Gender, and Sexuality Studies, Psychology, Communications, Foreign

Language, Business) or may choose to complete a secondary CFCS emphasis.

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
COMM 335	Intercultural Communication	3
or SOC 201	Introduction to Inequalities & Inclusion	
FCS 105	Individual and Family Development	3
FCS 205	Concepts in Human Nutrition	3
FCS 234	Infancy and Early Childhood	3
FCS 240	Intimate Relationships	3
FCS 251	Survey of FCS Professions	1
FCS 329	History of Western Dress	3
or FCS 419	Dress and Culture	
FCS 334	Middle Childhood-Adolescence	3
FCS 340	Parent-Child Relationships in Family and Community	3
FCS 346	Personal and Family Finance and Management	4
FCS 401	Professional Ethics and Practice in CFCS	1
FCS 436	Theories of Child and Family Development	3
FCS 440	Contemporary Family Relationships	3
FCS 445	Issues in Work and Family Life	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
STAT 251	Statistical Methods	3
One Social Science Research course (3-4 cr):		
ORGS 444	Methods and Analysis in Organizational Science	4
PSYC 218	Introduction to Research in the Behavioral Sciences	4
SOC 416	Qualitative Social Science Methods	3
SOC 417	Social Data Analysis	3
One of the following emphases:		21-27
Child Development and Family Relations (p.)		
Family Development Across the Lifespan (p.)		
Personal and Family Finance (p.)		
Total Hours		85-91

The minimum credits required for graduation are 128, including at least 36 credits at the 300-level or above.

A. Child Development and Family Relations Emphasis

The Child Development and Family Relations emphasis prepares students with a comprehensive understanding of child and youth development and family dynamics, based on theory and supported by research and professional practices. Careers include opportunities to provide direct services to children, youth and families such as teaching in early learning environments, working in diverse programs that offer support and teach skills to youth, serving as advocates for children and families, and providing parent education. The CDFR Emphasis allows students to develop individualized programs to meet personal and career goals.

Code	Title	Hours
EDSP 300	Educating for Exceptionalities	3
FCS 235	Principles and Methods of Child Observation	3
FCS 333	Developmental Curriculum for Young Children	4
FCS 435	Feeding Young Children in Group Settings	1
FCS 497	Internship Preschool (9 credits required)	9
H&S 288	First Aid: Emergency Response	2
Total Hours		22

Courses to total 128 credits for this degree.

B. Family Development across the Lifespan Emphasis

The Family Development across the Lifespan emphasis provides comprehensive preparation in family science. To equip students with dynamic, applied skills in working with and advocating for individuals, couples, and families, FDL coursework emphasizes strong foundational knowledge in and critical analysis of human development, family dynamics, and the factors that influence and contribute to healthy relationships and social interactions across the lifespan. Students may pursue course preparation for the Certified Family Life Educator certification through the National Council on Family Relations. In addition to offering an excellent springboard toward the pursuit of a graduate degree this Emphasis offers career preparation for jobs in human service organizations, government agencies, nonprofit organizations, and business firms.

Code	Title	Hours
FCS 123	Textiles	3
FCS 360	Sexuality Across the Lifespan	3
FCS 428	Housing America's Families	3
FCS 431	Certified Family Life Educator Methodology	3
FCS 434	Adulthood and Aging within the Context of Family	3
FCS 486	Nutrition in the Life Cycle	3
FCS 498	Internship	3-9
Total Hours		21-27

Courses to total 128 credits for this degree

C. Personal and Family Finance Emphasis

The Personal and Family Finance emphasis provides specialized preparation in personal finance and real estate. Upon completion of coursework, students are prepared to take the Accredited Financial Counselor exam and the Certified Housing Counselor exam. Career opportunities include jobs in military installations, the financial industry, real estate companies, nonprofit organizations, government agencies, and business firms.

Code	Title	Hours
FCS 146	Adulting: Life, Love & Money	3
FCS 428	Housing America's Families	3
FCS 446	Financial Counseling and Debt Management	3
FCS 448	Consumer Economic Issues	3
FCS 468	Real Estate Management	3
FCS 498	Internship	3-9
ORGS 155	Financial Literacy	3
Total Hours		21-27

Courses to total 128 credits for this degree

Early Childhood Development and Education (B.S.Erly.Chldhd.Dev.Ed.)

Coursework will prepare students to be recommended for Idaho Early Childhood Education/Early Childhood Special Education (ECE/ECSE) Blended Teacher Certification. Students will be certified to teach children birth through grade three.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 320	Teaching Reading and Literacy	3
EDCI 321	Literature for Children	3
EDCI 322	Teaching Writing/Language Arts	3
EDCI 325	Elementary Art Education	3
EDCI 327	Elementary Math Education	3
EDCI 328	Elementary Social Studies Educ	3
EDCI 329	Elementary Science Educatn	3
EDCI 401	Internship Seminar	1
EDCI 408	Integrated Methods Practicum I	1
EDCI 409	Integrated Methods Practicum II	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 483	Elementary Internship I	7
EDSP 300	Educating for Exceptionalities	3
EDSP 325	Supporting Student Behaviors in the Classroom	2
EDSP 350	Language and Communication Development and Disorders	3
EDSP 484	Special Education Internship II	7
FCS 205	Concepts in Human Nutrition	3
FCS 210	Introduction to Early Childhood Education	2
FCS 234	Infancy and Early Childhood	3
FCS 235	Principles and Methods of Child Observation	3
FCS 333	Developmental Curriculum for Young Children	4
FCS 340	Parent-Child Relationships in Family and Community	3
FCS 435	Feeding Young Children in Group Settings	1
FCS 436	Theories of Child and Family Development	3
FCS 480	Assessment: Early Childhood/SPED	3
FCS 481	Early Childhood SPED Curriculum	3
FCS 490	Infant & Toddler SPED Internship	1-7
FCS 497	Internship Preschool	8
MTHE 301	Early Childhood Mathematics	4
PEP 350	Elementary Health and Physical Education	3
Select a General Education Humanities elective		3
Select a General Education Mathematics elective		3
Select an English Literature elective		3
Select 8 credits of Natural science electives		8
Select 9 credits of Social Science Electives		9
Select one US History or US Government course		3
Total Hours		126-132

Courses to total 139 credits for this degree

Family and Consumer Sciences (M.S.)

Master of Science. Major in Family and Consumer Sciences.

A letter of intent, which includes a statement of goals, objectives, and academic interests, and three letters of recommendation are required for admission. Information may be obtained at the school.

1. Thesis Option: Thirty credits of course work including a 13-credit emphasis area in family and consumer sciences and related areas, two graduate seminars, courses in theory and research methods and analysis, and at least 6 credits of thesis research.
2. Non-thesis Option: Thirty-four credits of course work including a 17-19 credit emphasis area in family and consumer sciences and related areas, two graduate seminars, courses in theory and research methods and analysis, and a master's project.

Food and Nutrition (B.S.F.C.S.)

Family and Consumer Sciences Undergraduate Curricular Requirements

Required course work includes the university requirements (see regulation J-3 (p. 91)) and one of the following options.

This major prepares students for careers with government agencies, commodity groups, health and fitness agencies and businesses, and some components of the food industry. In addition, the course work provides excellent background for those wishing to pursue advanced degrees in medicine or nutrition or dietetics. Students wishing to become a Registered Dietitian Nutritionist will be prepared to apply to an accredited master's program in nutrition and dietetics.

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
BIOL 120	Human Anatomy	4
BIOL 121	Human Physiology	4
BIOL 300	Survey of Biochemistry	3
FCS 205	Concepts in Human Nutrition	3
FCS 270	Scientific Principles of Food Preparation	3
FCS 275	Experimental Foods	2
FCS 361	Advanced Nutrition	3
FCS 362	Introduction to Clinical Dietetics	3
FCS 384	Quantity Food Production and Equipment	3
FCS 385	Quantity Food Production and Equipment Lab	2
FCS 387	Food Systems Management	3
FCS 389	Intro Clinical Nutrition Lab	1
FCS 411	Global Nutrition	3
FCS 463	Helping Skills in Dietetics	2
FCS 473	Community Nutrition	3
FCS 486	Nutrition in the Life Cycle	3
FCS 492	Nutrition Education in the Life Cycle	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
STAT 251	Statistical Methods	3

CHEM 101	Introduction to Chemistry	3
or CHEM 111	General Chemistry I	
CHEM 101L	Introduction to Chemistry Laboratory	1
or CHEM 111L	General Chemistry I Laboratory	
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
FCS 105	Individual and Family Development	3
or PSYC 305	Developmental Psychology	
MATH 143	College Algebra	3-4
or MATH 170	Calculus I	
Select one of the following:		4-5
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Select 8 credits of FCS electives		8
Total Hours		85-87

Courses to total 120 credits for this degree

UI/WSU Bistate School of Food Science

Barbara Rasco, Department Head (111 Agricultural Science, 83844-2312, phone 208-885-0707);

The School of Food Science (SFS), jointly administered by the University of Idaho and Washington State University, offers courses of study in the undergraduate major field of food science. Students complete a prescribed course of study leading to the Bachelor of Science in Food Science with options in Food Science and Dairy Foods Management, and Fermentation Science. Graduate degrees are also offered leading to Masters and Doctor of Philosophy in Food Science. A minor in food science is also offered.

Food Science is the scientific discipline that supports the food and beverage manufacturing industry. Food Science is a multidisciplinary science that applies biology, chemistry, physics, engineering, nutrition, and other sciences to improve the safety and quality of food products; create healthy food products; and design new, safer, and more sustainable food preservation methods. Food scientists strive to improve the quality and nutrition of foods through traditional and emerging preservation technologies. Food scientists conduct research to mitigate chemical and microbial risk factors in foods and to understand the causes of food deterioration and spoilage. Food scientists are employed around the world by large and small food processing companies, food ingredient suppliers, food quality assurance and testing labs, federal and state governmental agencies, and academia. Food scientists also work with existing and emerging companies preparing organic, natural, kosher, and halal food products.

Gaining a food science education provides students with a challenging career not only in the Pacific Northwest, but also nationally and internationally. Food science graduates begin careers in food plant operations, food quality assurance, food safety microbiology, technical sales, food product development, regulatory affairs, or research in the food/allied industries or federal/state regulatory agencies. Food science students learn to convert raw agricultural commodities into high quality, safe and nutritious food products- the complete farm-to-table process. As part of the B.S. degree, students receive training and learn skills relative to the preservation, safety, risk management, nutrition, chemistry and sensory evaluation of foods. The food processing industry is continually challenged to improve food quality, as well as enhance the sustainable development of new foods to better meet consumer demands and the nutritional needs of the world. In the first two years of college, students enroll in science courses and complete most general university requirements. (Many of the general university requirements and introductory science and math courses can be completed at community colleges.)

In the junior and senior years, the curriculum emphasizes courses in food processing, food chemistry and analysis, food microbiology, sensory evaluation, and other specialized areas such as the processing of cereal, dairy, wine, fruit, and vegetable products. Students with specific interests can gain additional education by taking elective courses, participating in internships with food companies, joining student clubs or competitions, or conducting a research project with a faculty member. Contact the Food Science advisor for more information.

A student graduating with a B.S. in Food Science should be able to: 1. Demonstrate a level of comprehension of Food Science concepts and analyses equivalent to or greater than that required by the Institute of Food Technologists Core Competencies Guidelines. 2. Critically evaluate and summarize a food science issue or problem. 3. Apply critical thinking and problem-solving skills to address current challenges in the food industry. 4. Communicate effectively in both written and oral format with an audience possessing varying degrees of food science knowledge.

Students planning to transfer to the School of Food Science should coordinate their programs of study with an advisor to select courses applicable to the degree requirements. Many of the general university course requirements and introductory chemistry, biology, and physics courses can be completed at community colleges. We especially recommend students take the appropriate science and mathematics courses required in our first two years of study, so students are on track when transferring to the University of Idaho. Students who identify an interest in graduate work are encouraged to contact their advisor no later than the end of the junior year so a course of study can be planned which schedules appropriate prerequisites to graduate courses and an introduction to research projects. Students from other science majors who wish to obtain an advanced degree in food science are encouraged to apply as they may be well prepared for graduate studies. Students are required to take certain core courses required of food science undergraduates in addition to those needed for their graduate program. For more complete information on research opportunities, please see faculty profiles on the SFS website.

Admission to the graduate program is based on ability to complete graduate-level work as evidenced by undergraduate transcripts; the compatibility of the student's objectives with faculty expertise and program objectives; and availability of graduate faculty to act as major advisor for the applicant. The School of Food Science requires GRE and TOEFL scores, in addition to admission materials required by the UI College of Graduate Studies.

The School of Food Science welcomes inquiries about our program. Potential students can contact the School via phone (208-885-0707), email (foodscience@uidaho.edu) or visit the School of Food Science main office in the E. J. Iddings Ag Science Building Rm 111, or review

https://www.uidaho.edu/cals/school-of-food-science, or SFS website (www.uidaho.edu/cals/school-of-food-science).

Majors

- Food Science (B.S.F.S.) (p. 126)

Minors

- Food Science Minor (p. 128)

Food Science Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the UI/WSU Bistate School of Food Science. See the College of Graduate Studies (p. 232) section for general requirements applicable to degree programs.

- Food Science (M.S.) (p. 127)
- Food Science (Ph.D.) (p. 127)

Food Science (B.S.F.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
COMM 101	Fundamentals of Oral Communication	2
FCS 205	Concepts in Human Nutrition	3
FS 302	Food Processing Lab	1
FS 303	Food Processing	3
FS 416	Food Microbiology	3
FS 417	Food Microbiology Laboratory	2
FS 418	Oral Seminar in Food Science	1
FS 432	Food Engineering	3
FS 433	Food Engineering Lab	1
FS 460	Food Chemistry	3
FS 461	Food Chemistry Lab	1
FS 489	Food Product Development	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
STAT 251	Statistical Methods	3
Select one of the following:		3-4
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	
BIOL 154	Introductory Microbiology	
Options		
Select one of the following options:		50-55
Food Science (p. 126)		
Dairy Food Management (p. 126)		
Fermentation (p. 127)		
Total Hours		100-106

A. Food Science Option

Code	Title	Hours
BIOL 300	Survey of Biochemistry	3-4
or BIOL 380	Biochemistry I	
COMM 233	Interpersonal Communication	3
or SOC 337	Violence and Society	
ENGL 317	Technical Writing	3
FS 110	Introduction to Food Science	3
FS 220	Food Safety and Quality	3
FS 422	Sensory Evaluation of Food and Wine	3
FS 423	Sensory Evaluation of Food and Wine Laboratory	1
FS 462	Food Analysis	3
FS 470	Advanced Food Technology	3
PHIL 103	Introduction to Ethics	3
or PHIL 351	Philosophy of Science	
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Select one of the following:		4
CHEM 275 & CHEM 276	Carbon Compounds and Carbon Compounds Lab	
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	
Select 16 credits from the following:		16
BIOL 433	Pathogenic Microbiology	
MHR 311	Introduction to Management	
MKTG 321	Marketing	
FS 304	Cereal Chemistry and Processing	
FS 363	Animal Products for Human Consumption	
FS 398	Internship	
FS 406	Evaluation of Dairy Products	
FS 436	Principles of Sustainability	
FS 465	Wine Microbiology and Processing	
FS 464	Food Toxicology	
FS 466	Wine Microbiology and Processing Lab	
FS 475	Quality Management Tools for Food Products	
FS 499	Directed Study	
PLSC 440	Advanced Laboratory Techniques	
Total Hours		52-53

Courses to total 120 credits for this degree

B. Dairy Food Management Option

Code	Title	Hours
AVS 172	Principles and Practices of Dairy Science	2
BIOL 300	Survey of Biochemistry	3
CHEM 275	Carbon Compounds	3
CHEM 276	Carbon Compounds Lab	1
ECON 202	Principles of Microeconomics	3-4
or ECON 272	Foundations of Economic Analysis	
ENGL 316	Environmental Writing	3

FS 329	Dairy Foods Composition and Quality	4
FS 398	Internship	2
FS 406	Evaluation of Dairy Products	2
FS 429	Dairy Products	3
FS 430	Dairy Products Lab	1
FS 436	Principles of Sustainability	3
FS 475	Quality Management Tools for Food Products	3
PHIL 103	Introduction to Ethics	3
or PHIL 201	Critical Thinking	
Select 18 credits from the following:		18
ACCT 201	Introduction to Financial Accounting	
AGEC 289	Agricultural Markets and Prices	
AGEC 301	Managerial Economics: Production	
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 333	Introduction to Sales	
AVS 472	Dairy Cattle Management	
BLAW 265	Legal Environment of Business	
MHR 311	Introduction to Management	
MKTG 321	Marketing	
OM 378	Project Management	
FS 422	Sensory Evaluation of Food and Wine	
FS 423	Sensory Evaluation of Food and Wine Laboratory	
FS 462	Food Analysis	
FS 464	Food Toxicology	
FS 470	Advanced Food Technology	
FS 499	Directed Study	
RMAT/MKTG 495	Product Development and Brand Management	
Total Hours		54-55

Courses to total 120 credits for this degree

C. Fermentation Option

Code	Title	Hours
BIOL 300	Survey of Biochemistry	3-4
or BIOL 380	Biochemistry I	
ENGL 317	Technical Writing	3
FS 113	Introduction to Vines and Wines	3
FS 220	Food Safety and Quality	3
FS 301	Food Mycology	3
FS 304	Cereal Chemistry and Processing	3
FS 401	Industrial Fermentations	3
FS 402	Ciders and Other Fermented Foods	3
FS 422	Sensory Evaluation of Food and Wine	3
FS 423	Sensory Evaluation of Food and Wine Laboratory	1
FS 465	Wine Microbiology and Processing	3
FS 466	Wine Microbiology and Processing Lab	1
FS 498	Internship	1
MKTG 321	Marketing	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Select one of the following:		4
CHEM 275 & CHEM 276	Carbon Compounds and Carbon Compounds Lab	
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	
Select two of the following:		6
FS 464	Food Toxicology	
PHIL 103	Introduction to Ethics	
PHIL 351	Philosophy of Science	
Total Hours		50-51

Courses to total 122 credits for this degree.

Food Science (M.S.)

Master of Science. Major in Food Science.

Thesis and non-thesis options are offered.

1. *Thesis option* : University M.S. degree requirements apply along with specific department requirements for the M.S. in food science as described on the department webpage (www.sfs.wsu.edu/graduate-program/ui-graduate-students (http://www.sfs.wsu.edu/graduate-program/ui-graduate-students)). The degree will prepare students for a variety of careers in the food and related industries, as well as for further academic studies. Each student will design a study plan in consultation with an advisor and thesis committee and present a thesis proposal to their committee. The degree program emphasizes research and a thesis is required for graduation. An oral examination covering graduate course work and thesis research is required during the student's final semester.
2. *Non-thesis option* : The non-thesis degree is designed to provide students with a broad perspective in food science. The student should have career goals that do not include a research emphasis. University M.S. degree requirement apply plus additional requirements described on the department webpage (www.sfs.wsu.edu/graduate-program/ui-graduate-students (http://www.sfs.wsu.edu/graduate-program/ui-graduate-students)). The non-thesis option requires a minimum of 33 credits, the appointment of a graduate committee and a final oral examination. Along with specific course requirements, the student is required to complete a substantial project, paper or presentation to demonstrate ability for independent work and critical thinking. Students are not eligible for the non-thesis option if they have been supported on a graduate assistantship.

Food Science (Ph.D.)

Doctor of Philosophy. Major in Food Science.

University Ph.D. requirements apply, along with specific departmental requirements described on the department webpage (www.sfs.wsu.edu/graduate-program/ui-graduate-students/phd-req-ui (http://www.sfs.wsu.edu/graduate-program/ui-graduate-students/phd-req-ui)) for a Ph.D. in food science. Admission to the doctoral program is based on compatibility of the student's research interests with those of the major professor, on availability of research support, and the student's academic record and potential. An oral preliminary exam and written dissertation proposal are required prior to admission to final candidacy for the degree. All candidates prepare a dissertation based on independent laboratory research and defend it as part of the final

oral exam. Publication of data from the dissertation in a peer-reviewed scientific journal is expected. Participation in research seminars and in department teaching programs is designed to prepare students for professional opportunities.

Food Science Minor

A minor in food science will provide undergraduates with an introduction to the discipline of food science and technology. The minor is designed to supplement technical or business skills obtained in other majors. The minor will allow a student to broaden his or her educational background and enhance employment options in the food industry.

Code	Title	Hours
FS 110	Introduction to Food Science	3
or FS 220	Food Safety and Quality	
FS 303	Food Processing	3
FS 416	Food Microbiology	3
FS 417	Food Microbiology Laboratory	2
Select additional courses selected from the following:		9
FS 302	Food Processing Lab	
FS 406	Evaluation of Dairy Products	
FS 409	Principles of Environmental Toxicology	
FS 422	Sensory Evaluation of Food and Wine	
FS 423	Sensory Evaluation of Food and Wine Laboratory	
FS 429	Dairy Products	
FS 430	Dairy Products Lab	
FS 432	Food Engineering	
FS 433	Food Engineering Lab	
FS 436	Principles of Sustainability	
FS 460	Food Chemistry	
FS 461	Food Chemistry Lab	
FS 464	Food Toxicology	
FS 465	Wine Microbiology and Processing	
FS 466	Wine Microbiology and Processing Lab	
FS 470	Advanced Food Technology	
Total Hours		20

Courses to total 20 credits for this minor

Department of Plant Sciences

Robert Tripepi, Chair (Ag.Sci. Bldg. Room 242, 875 Perimeter Drive MS 2333, Moscow, ID 83844-2333; phone 208-885-2122; plantsciences@uidaho.edu).

The Department of Plant Sciences is in the College of Agricultural and Life Sciences. We offer a B.S. degree in Plant Science within which students may focus on majors tailored to the needs of their educational and career goals in agriculture and plant sciences. The four majors include Biotechnology and Plant Genomics, Crop Management, Crop Science, and Horticulture and Urban Agriculture. At the graduate level, we offer M.S. and Ph.D. degrees in Plant Science.

Our faculty and staff are committed to help students develop skills needed for professional careers in theoretical and applied sciences necessary to increase future crop production and agricultural sustainability. In addition, we offer courses and laboratory experiences in the use of biotechnology and modern plant breeding to improve and protect the major crops in the Pacific Northwest.

Undergraduate Degree Program

B.S. Degree in Plant Science

The degree offers students broad-based preparation in crop science and management, horticulture, plant biotechnology, plant breeding and genetics, and weed science. The four majors in this degree program are:

Biotechnology and Plant Genomics

Students in the Biotechnology and Plant Genomics major will gain experience with the latest molecular genetic techniques to address food and energy needs of the United States and world in the 21st century. Students will learn how scientists investigate and manipulate genetic information at the molecular level to create and select crop plants with improved yield, nutritional value, insect and disease resistance, and temperature tolerance to address the needs of today's farmers and the challenges brought on by the ever-growing world population, competing demands for water, and threats brought on by climate change. Our students are offered numerous opportunities to participate in research projects in our plant biotechnology laboratories. This major prepares students for graduate education or for professional careers in industries that routinely employ genomics, genetic engineering, marker-assisted plant breeding, plant genetics, molecular biology, tissue culture, and molecular responses to disease.

Crop Management

The Crop Management major is new and designed to meet high demands for graduates qualified in applied field agronomy, production agriculture and production management, and to make business decisions that arise in local and nationwide agriculture. Future expanding food and energy needs will require crop production managers and farm managers to ensure high volume and high quality of agricultural products. Students who have an interest in management of crops should enroll in this major rather than crops sciences, which requires more science courses. In addition, students majoring in Crop Management will be educated in applied crop production and management, combined with courses in agricultural economics and farming systems. This major will be particularly attractive to students who wish to be employed in applied production agriculture. Graduates will be well-rounded and prepared to manage family or large corporate agro-businesses, and work as field agronomists, crop production managers, and farm managers.

Crop Science

Students in the Crop Science major receive a science-based education in a wide range of disciplines aimed at solving theoretical and applied challenges relating to increasing agricultural productivity and developing systems that advance agriculture sciences into the future. Demand for increased food production is ever present and to compete, agriculture needs to develop new crop genetics and agronomic practices that maximize output while reducing crop inputs and reducing the agricultural footprint on the environment. This major combines physical and biological sciences and related subjects to develop innovative solutions to a wide range of problems that will be met by future agriculture. Courses emphasize environmental concerns, ecological relationships, and sustainability of agricultural systems. This major will prepare students for graduate education or professional careers in field agronomy, agricultural research, plant protection, agricultural consulting, plant breeding and genetics, seed production and certification, and weed science.

Horticulture and Urban Agriculture

The Horticulture and Urban Agriculture major is designed to provide students with a background in production of various horticultural crops in rural and urban locations or experience with care of managed landscapes including parks and sports turf. Students can tailor horticulture course selection to specialize in a particular horticulture career. Management of horticultural crops that are economically significant to Idaho and the nation are emphasized in various courses. Many facets of horticulture, including horticultural crop production, can be studied, particularly since food security and sustainable production practices are needed if graduates are to meet the challenges posed by increased urbanization and more costly resources needed for plant production. Students are prepared for graduate studies or professional careers in management and operation of commercial greenhouses, nurseries, orchards, vineyards or vegetable farms. Students also have the opportunity to focus on managing and maintaining the various components of urban landscapes including trees, shrubs, herbaceous plantings and turfgrass, or urban food production.

Our degree offerings are designed to prepare students for rewarding careers in public or private enterprises or for entrance into graduate as well as professional programs. We offer students the opportunity to work closely with faculty in classroom, laboratory and field situations. Our faculty members care about our students' individual needs and interests and offer additional specialization through directed study, special topics, seminars and other courses as needed. An internship program is available to provide students with practical job experience and to open doors for future careers. In addition, we coordinate closely with the Departments Soil and Water Systems, Entomology, Plant Pathology and Nematology, Animal and Veterinary Science, and Agricultural Economics and Rural Sociology to broaden education offerings for our students.

Our students have access to the Lambert-Erickson Weed Herbarium that houses one of the nation's outstanding weed collections with all life stages of weeds represented. We have a state-of-the-art biotechnology facility with specially-equipped laboratories for histology, anatomy, and physiology, as well as greenhouse growing space and growth chambers/rooms with controlled temperature and light-programming capabilities. All these facilities can become part of each student's educational experiences. The University has 1,145 acres located close to campus for field crops, and livestock. Excellent field and laboratory facilities are also available at our research and extension centers at Aberdeen, Parma and Twin Falls, including nationally recognized fruit research and potato research programs.

We welcome questions regarding our Plant Sciences programs. Prospective students may contact us by email at plantsciences@uidaho.edu, or by telephone at 208-885-2122.

Majors

- Biotechnology and Plant Genomics (B.S.Pl.Sc.) (p. 129)
- Crop Management (B.S.Pl.Sc.) (p. 130)
- Crop Science (B.S.Pl.Sc.) (p. 131)
- Horticulture and Urban Agriculture (B.S.Pl.Sc.) (p. 132)

Minors

- Biotechnology and Plant Genomics Minor (p. 130)
- Crop Management Minor (p. 131)
- Crop Science Minor (p. 132)
- Horticulture Minor (p. 133)

Plant Sciences Graduate Programs

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Plant, Soil, and Entomological Sciences. See the College of Graduate Studies (p. 232) section for general requirements applicable to each degree.

Master and Doctoral students will choose a major professor with the concurrence of the faculty member involved. This choice is based upon the availability of the faculty member and the compatibility of the student's research interests with those of the professor.

- Plant Science (M.S.) (p. 133)
- Plant Science (Ph.D.) (p. 133)

Biotechnology and Plant Genomics (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
AGED 406	Exploring International Agriculture	3
or POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
PLSC 102	The Science of Plants in Agriculture	3
PLSC 400	Seminar	1
SOIL 205	The Soil Ecosystem	3
Select one of the following:		4-5
EPPN 154	Microbiology and the World Around Us	
EPPN 155	Microbiology and the World Around Us: Laboratory	
BIOL 250	General Microbiology	
BIOL 255	General Microbiology Lab	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	
Biotechnology and Plant Genomics Courses		
BIOL 380	Biochemistry I	4
BIOL 444	Genomics	3

CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
GENE 314	General Genetics	3
PLSC 207	Introduction to Biotechnology	3
PLP 415	Plant Pathology	3
PLSC 401	Plant Physiology	3
PLSC 433	Plant Tissue Culture Techniques	3
PLSC 440	Advanced Laboratory Techniques	4
PLSC 446	Plant Breeding	3
PLSC 486	Plant Biochemistry	3
PLSC 488	Genetic Engineering	3
STAT 251	Statistical Methods	3
Select 12 credits of Biotechnology and Genomics of Plants electives from the following:		12
BIOL 213	Principles of Biological Structure and Function	
BIOL 382	Biochemistry I Laboratory	
BIOL 482	Protein Structure and Function	
BIOL 485	Prokaryotic Molecular Biology	
BIOL 487	Eukaryotic Molecular Genetics	
ENT 322	General and Applied Entomology	
PLSC 201	Principles of Horticulture	
PLSC 205	General Botany	
PLSC 338	Weed Control	
PLSC 407	Field Crop Production	
PLSC 410	Invasive Plant Biology	
PLSC 438	Pesticides in the Environment	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
SOIL 206	The Soil Ecosystem Lab	
SOIL 446	Soil Fertility	
Total Hours		90-92

Courses to total 120 credits for this degree

Biotechnology and Plant Genomics Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
PLSC 207	Introduction to Biotechnology	3
PLSC 488	Genetic Engineering	3
One of the following (3 cr):		3
GENE 314	General Genetics	
BIOL 310	Genetics	
Two of the following courses: (6-7 cr):		6-7
BIOL 444	Genomics	
BIOL 487	Eukaryotic Molecular Genetics	
PLSC 440	Advanced Laboratory Techniques	
PLSC 486	Plant Biochemistry	
PLSC 446/546	Plant Breeding	
Total Hours		19-20

Courses to total 19-20 credits

Crop Management (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
PLSC 102	The Science of Plants in Agriculture	3
PLSC 400	Seminar	1
SOIL 205	The Soil Ecosystem	3
AGED 406	Exploring International Agriculture	3
or POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
Select one of the following:		4-5
BIOL 154 & BIOL 155	Introductory Microbiology and Introductory Microbiology Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	
Crop Management Courses		
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
ASM 305	GPS and Precision Agriculture	3
ASM 315	Irrigation Systems and Water Management	3
ASM 412	Agricultural Safety and Health	2
PLSC 338	Weed Control	4
PLSC 407	Field Crop Production	3
PLSC 408	Cereal Science	3
PLSC 438	Pesticides in the Environment	3
PLSC 451	Vegetable Crops	3
PLSC 480	Field Trip	1
PLSC 490	Potato Science	3

SOIL 206	The Soil Ecosystem Lab	1
Select 15 credits of Crop Management electives from the following:		15
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 356	Agricultural and Rural Policy	
AGEC 447	International Development Economics	
ASM 107	Beginning Welding	
ASM 112	Introduction to Agricultural Systems Management	
ASM 409	Agricultural Tractors, Power Units and Machinery Management	
ECON 202	Principles of Microeconomics	
GENE 314	General Genetics	
PLP 415	Plant Pathology	
PLSC 401	Plant Physiology	
PLSC 446	Plant Breeding	
SOIL 425	Microbial Ecology	
SOIL 446	Soil Fertility	
STAT 251	Statistical Methods	
Select 6 credits of Professional Support electives from the following:		6
AGEC 411	The World of International Agribusiness	
AGEC 419	Development and Analysis of Enterprise Budgets	
AVS 109	The Science of Animals that Serve Humanity	
CHEM 275	Carbon Compounds	
CHEM 276	Carbon Compounds Lab	
PLSC 201	Principles of Horticulture	
PLSC 205	General Botany	
PLSC 207	Introduction to Biotechnology	
PLSC 300	Plant Propagation	
PLSC 398	Internship	
PLSC 410	Invasive Plant Biology	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 440	Advanced Laboratory Techniques	
PLSC 488	Genetic Engineering	
STAT 251	Statistical Methods	
Total Hours		88-90

Courses to total 120 credits for this degree

Crop Management Minor

Code	Title	Hours
PLSC 102	The Science of Plants in Agriculture	3
PLSC 407	Field Crop Production	3
AGEC 278	Farm and Agribusiness Management	4
Select Two of the following:		6
PLSC 408	Cereal Science	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
Select 6 credits from the following:		6
AGEC 356	Agricultural and Rural Policy	
or AGEC 477	Law, Ethics and the Environment	
ASM 305	GPS and Precision Agriculture	
ASM 315	Irrigation Systems and Water Management	
ASM 412	Agricultural Safety and Health	
PLSC 338	Weed Control	
PLSC 408	Cereal Science	
PLSC 438	Pesticides in the Environment	
PLSC 446	Plant Breeding	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
SOIL 446	Soil Fertility	
Total Hours		22

Courses to total 22 credits for this minor.

Crop Science (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
PLSC 102	The Science of Plants in Agriculture	3
PLSC 400	Seminar	1
SOIL 205	The Soil Ecosystem	3
AGED 406	Exploring International Agriculture	3
or POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
Select one of the following:		4-5
BIOL 154 & BIOL 155	Introductory Microbiology and Introductory Microbiology Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	
Crop Science Courses		
CHEM 275	Carbon Compounds	3
CHEM 276	Carbon Compounds Lab	1
ENT 322	General and Applied Entomology	4
GENE 314	General Genetics	3

PLSC 207	Introduction to Biotechnology	3
PLSC 338	Weed Control	4
PLSC 401	Plant Physiology	3
PLSC 407	Field Crop Production	3
PLP 415	Plant Pathology	3
PLSC 438	Pesticides in the Environment	3
PLSC 446	Plant Breeding	3
PLSC 480	Field Trip	1
SOIL 206	The Soil Ecosystem Lab	1
SOIL 446	Soil Fertility	1-3
STAT 251	Statistical Methods	3
Select 12 credits of Crop Science electives from the following:		12
PLSC 201	Principles of Horticulture	
PLSC 205	General Botany	
PLSC 300	Plant Propagation	
PLSC 398	Internship	
PLSC 408	Cereal Science	
PLSC 410	Invasive Plant Biology	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 440	Advanced Laboratory Techniques	
PLSC 451	Vegetable Crops	
PLSC 488	Genetic Engineering	
PLSC 490	Potato Science	
Select 6 credits of Professional Support electives from the following:		6
AGEC 278	Farm and Agribusiness Management	
AGEC 289	Agricultural Markets and Prices	
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 356	Agricultural and Rural Policy	
AGEC 447	International Development Economics	
ASM 107	Beginning Welding	
ASM 305	GPS and Precision Agriculture	
ASM 315	Irrigation Systems and Water Management	
ASM 412	Agricultural Safety and Health	
STAT 431	Statistical Analysis	
Total Hours		88-92

Courses to total 120 credits for this degree

Crop Science Minor

Code	Title	Hours
GENE 314	General Genetics	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 338	Weed Control	4
PLSC 407	Field Crop Production	3
PLSC 446	Plant Breeding	3
Select two courses from the following:		6
PLSC 408	Cereal Science	
PLSC 438	Pesticides in the Environment	
PLSC 451	Vegetable Crops	
PLSC 440	Advanced Laboratory Techniques	
PLSC 488	Genetic Engineering	
PLSC 490	Potato Science	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
SOIL 446	Soil Fertility	
Total Hours		22

Courses to total 22 credits for this minor

Horticulture and Urban Agriculture (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
PLSC 102	The Science of Plants in Agriculture	3
PLSC 400	Seminar	1
SOIL 205	The Soil Ecosystem	3
AGED 406	Exploring International Agriculture	3
or POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
Select one of the following:		4-5
BIOL 154 & BIOL 155	Introductory Microbiology and Introductory Microbiology Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	
Horticulture and Urban Agriculture Courses		
CHEM 275	Carbon Compounds	3
CHEM 276	Carbon Compounds Lab	1
ENT 322	General and Applied Entomology	4
PLP 415	Plant Pathology	3
PLSC 201	Principles of Horticulture	3
PLSC 300	Plant Propagation	3
PLSC 401	Plant Physiology	3
PLSC 438	Pesticides in the Environment	3

SOIL 206	The Soil Ecosystem Lab	1
Select 12 credits of Horticulture electives from the following:		12
LARC 288	Plant Materials & Design 1	
PLSC 340	Nursery Management	
PLSC 341	Nursery Management Laboratory	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 451	Vegetable Crops	
PLSC 464	Landscape Maintenance	
PLSC 480	Field Trip	
PLSC 490	Potato Science	
SOIL 417	Market Garden Practicum	
Select 15 credits of Professional Support electives from the following:		15
GENE 314	General Genetics	
PLSC 205	General Botany	
PLSC 207	Introduction to Biotechnology	
PLSC 338	Weed Control	
PLSC 407	Field Crop Production	
PLSC 410	Invasive Plant Biology	
PLSC 446	Plant Breeding	
PLSC 488	Genetic Engineering	
SOIL 446	Soil Fertility	
STAT 251	Statistical Methods	
Total Hours		82-84

Courses to total 120 credits for this degree

Horticulture Minor

Code	Title	Hours
PLSC 102	The Science of Plants in Agriculture	3
PLSC 201	Principles of Horticulture	3
Select three courses from the following:		9
PLSC 300	Plant Propagation	
PLSC 340	Nursery Management	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 464	Landscape Maintenance	
Select two courses from the following:		6
LARC 288	Plant Materials & Design 1	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
SOIL 205	The Soil Ecosystem	
Total Hours		21

Courses to total 21 credits for this minor

Plant Science (M.S.)

Master of Science. Major in Plant Science. (Thesis Option)

General M.S. requirements apply. These requirements include a formal program of at least 30 semester hours to be chosen in consultation with the major professor and approved by the student's supervisory committee. Candidates for this degree must complete an independent research project and submit an acceptable thesis as well as pass a final oral examination.

Master of Science. Major in Plant Science. (Non-thesis Option)

General M.S. non-thesis requirements apply.

Plant Science (Ph.D.)

Doctor of Philosophy. Major in Plant Science.

University Ph.D. requirements apply. Additional specific requirements are determined by the student's graduate committee.

Department of Soil and Water Systems

Jodi Johnson-Maynard, Chair, Moscow, ID 83844-2339; phone 208-885-7012; jmaynard@uidaho.edu).

The Department of Soil and Water Systems (SWS) addresses resource issues related to soil, water quality and quantity, and sustainable food, energy, agricultural and waste systems. The unit combines faculty with expertise in soil science, hydrology, sediment transport, water resources, irrigation engineering, bioenergy, precision agriculture, nutrient cycling, waste management, agronomy, and agricultural systems management to study complex problems and inform the management, use and sustainability of agro-ecosystems. SWS faculty fulfill this commitment through focused excellence in research, teaching and extension. With faculty located at four research centers throughout the state, SWS has statewide responsibility and impact. The department's teaching program includes a Bachelor of Science in Soil and Water Systems (B.S.S.W.S.) with majors in Environmental Soil Science, Water Science and Management and Agricultural Systems Management. A college-wide major in Sustainable Food Systems is also administered through SWS. Graduate programs (MS and PhD) are available in Soil and Land Resources. Graduate degrees in water are offered through an interdisciplinary program in Water Resources.

The Agricultural Systems Management major prepares students to apply biological, physical, mechanical, and business knowledge to the production, service, sales, application, and management of the equipment and processes used in agriculture. The curriculum stresses courses in agricultural systems management, and basic and applied sciences. It also includes a strong background in agricultural economics, accounting, and business. It prepares students for a variety of important and rewarding career opportunities across the entire spectrum of the food and fiber sector. Many graduates return to farming, while others pursue careers as farm managers or are employed in agricultural and natural resource-oriented businesses, banking firms, educational institutions, or governmental agencies.

The Environmental Soil Science major prepares students to work in a variety of fields related to natural resource management. The curriculum stresses in-depth understanding of the field through interdisciplinary training in pedology, soil chemistry, soil physics, soil ecology and fertility. Graduates are employed as soil scientists, conservationists, agronomists, laboratory managers, and consultants. Students gain hands-on experience by working in laboratories and conducting undergraduate

research. Students work towards becoming certified soil scientists prior to graduating.

The Water Science and Management major produces graduates that understand the critical importance of using science to better manage water resources. Graduates fill critical roles in the agricultural industry, research facilities and state and federal agencies. The breadth of the major offered in this curriculum allows students to develop strong expertise in managing water in complex ecosystems including agriculture, forestry, and rangeland. The degree includes additional math and GIS-based mapping requirements to ensure that graduates have the ability to be successful in job roles such as quantitative hydrologist, and irrigation, precision agriculture, and watershed management technicians.

The Sustainable Food Systems major takes an interdisciplinary, farm-to-plate approach to understanding of food, farming and human health. The degree is designed to provide a science-based understanding of the many facets of food- from sustainable production, food chemistry and safety, to policy and human nutrition. Students tie everything together in sophomore and senior level courses that explore local, regional and global food systems. Many laboratory-based courses offer hands-on experience. Students may specialize in specific areas of the food system. Students gain hands-on experience through required practicum courses and internships and can put concepts taught in courses to work while operating the campus organic farm.

Degree offerings within SWS are designed to prepare students for graduate school and a variety of rewarding career opportunities. All of our programs are based on curricula designed to prepare students for present and future employment. We offer students the opportunity to work closely with faculty in classroom and field situations. Our faculty members offer additional specialization through directed study, special topics, seminars and other courses as needed. Internships are available to provide students with practical job experience and to open doors for career opportunities. Students are encouraged to participate in international exchanges offered through the College of Agricultural and Life Sciences.

We offer many opportunities to conduct advanced, in-depth studies with our important scientific collections and cutting-edge facilities. The Maynard A. Fosberg Monolith collection is one of the largest in the world with 232 soil monoliths. We have a state-of-the-art analytical laboratory facility to accommodate faculty, staff and students. We also offer a greenhouse facility with controlled temperature and light-programmed rooms and growth chambers. The University has 1,145 acres located close to campus for field crops, orchards and livestock. Excellent field and laboratory facilities are also available at our research and extension centers at Aberdeen, Parma, Kimberly, and Twin Falls

Majors

- Sustainable Food Systems (B.S.Ag.L.S.) (p. 136)
- Agricultural and Life Sciences Core (p. 109)
- Agricultural Systems Management (B.S.S.W.S.) (p. 134)
- Environmental Soil Science (B.S.S.W.S.) (p. 135)
- Water Science and Management (B.S.S.W.S.) (p. 136)

Minors

- Agricultural Systems Management Minor (p. 135)
- Soil Science Minor (p. 136)

Soil and Water Systems Graduate Programs

- Soil and Land Resources (Ph.D.) (p. 136)
- Soils (M.S.) (p. 136)

Agricultural Systems Management (B.S.S.W.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
Soil and Water Systems Core		
ASM 315	Irrigation Systems and Water Management	3
AGED 406	Exploring International Agriculture	3
or SOC 350	Food, Culture, and Society	
COMM 101	Fundamentals of Oral Communication	2
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
GEOG 385	GIS Primer	3
MATH 143	College Algebra	3
PLSC 102	The Science of Plants in Agriculture	3
or REM 221	Principles of Ecology	
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 438	Pesticides in the Environment	3
STAT 251	Statistical Methods	3
Agricultural Systems Management Courses		
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AGEC 356	Agricultural and Rural Policy	3
ASM 107	Beginning Welding	2
ASM 112	Introduction to Agricultural Systems Management	3
ASM 200	Seminar	1
ASM 202	Agricultural Shop Practices	2
ASM 305	GPS and Precision Agriculture	3
ASM 331	Electric Power Systems for Agriculture	3
ASM 409	Agricultural Tractors, Power Units and Machinery Management	4
ASM 412	Agricultural Safety and Health	2
ASM 433	Agricultural Processing Systems	3
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
BUS 190	Integrated Business and Value Creation	3
BLAW 265	Legal Environment of Business	3
ECON 202	Principles of Microeconomics	3
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	

Select one of the following:		4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select one AgEc Elective - Upper Division course		3
Select one Life Science Elective		3
Select 10 credits of Agricultural and Technical Electives from the following courses or subject areas:		10
AGLS 495	CALS Ambassadors	
ASM 210	Small Engines	
ASM 398	Internship	
ASM 498	Internship	
ASM 499	Directed Study	
FCS 346	Personal and Family Finance and Management	
FCS 446	Financial Counseling and Debt Management	
AGEC (p. 392)		
AGED (p. 396)		
AVS (p. 403)		
FS (p. 524)		
PLSC (p. 663)		
REM (p. 679)		
SOIL (p. 696)		
Total Hours		106

Courses to total 128 credits for this degree

Agricultural Systems Management Minor

Code	Title	Hours
ASM 202	Agricultural Shop Practices	2
ASM 305	GPS and Precision Agriculture	3
ASM 315	Irrigation Systems and Water Management	3
ASM 409	Agricultural Tractors, Power Units and Machinery Management	4
ASM 412	Agricultural Safety and Health	2
Select at least 4 credits from the following skill courses:		4
ASM 107	Beginning Welding	
ASM 112	Introduction to Agricultural Systems Management	
ASM 210	Small Engines	
ENGR 105	Engineering Graphics	
Total Hours		18

Courses to total 18 credits for this minor

Environmental Soil Science (B.S.S.W.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
Soil and Water Systems Core		
ASM 315	Irrigation Systems and Water Management	3
AGED 406	Exploring International Agriculture	3
or SOC 350	Food, Culture, and Society	
COMM 101	Fundamentals of Oral Communication	2
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
GEOG 385	GIS Primer	3
MATH 143	College Algebra	3
PLSC 102	The Science of Plants in Agriculture	3
or REM 221	Principles of Ecology	
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 438	Pesticides in the Environment	3
STAT 251	Statistical Methods	3
Environmental Soil Science Courses		
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Principles of Biological Structure and Function	4
or PLSC 205	General Botany	
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
GEOL 111	Physical Geology for Science Majors	3
GEOL 101L	Physical Geology Lab	1
or GEOL 111L	Physical Geology for Science Majors Lab	
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
SOIL 400	Seminar	1
SOIL 415	Soil and Environmental Physics	3
SOIL 422	Environmental Soil Chemistry	3
SOIL 425	Microbial Ecology	3
SOIL 446	Soil Fertility	1-3
SOIL 454	Pedology	3
SOIL 499	Directed Study	1
Total Hours		86-88

Courses to total 128 credits for this degree

Soil and Land Resources (Ph.D.)

Doctor of Philosophy. Major in Soil and Land Resources.

University Ph.D. requirements apply. Additional specific requirements are determined by the student's graduate committee.

Soil Science Minor

Code	Title	Hours
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 415	Soil and Environmental Physics	3
SOIL 422	Environmental Soil Chemistry	3
SOIL 438	Pesticides in the Environment	3
SOIL 446	Soil Fertility	1-3
SOIL 454	Pedology	3
Select courses from the following to total at least 20 credits for this minor:		
SOIL 417	Market Garden Practicum	
SOIL 425	Microbial Ecology	
Total Hours		17-19

Courses to total 20 credits for this minor

Soils (M.S.)

Master of Science. Major in Soils. (Thesis Option)

General M.S. requirements apply. These requirements include a formal program of at least 30 semester hours to be chosen in consultation with the major professor and approved by the student's supervisory committee. Candidates for this degree must complete an independent research project and submit an acceptable thesis as well as pass a final oral examination.

Master of Science. Major in Soils. (Non-thesis Option)

General M.S. non-thesis requirements apply.

Sustainable Food Systems (B.S.Ag.L.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
Agricultural and Life Sciences Core (p. 109)		33-34
Sustainable Food Systems Courses		
AGED 448	Foundations of Extension Education	2
ASM 315	Irrigation Systems and Water Management	3
AVS 109	The Science of Animals that Serve Humanity	4
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
ENT 322	General and Applied Entomology	4
FCS 205	Concepts in Human Nutrition	3
FOR 221	Principles of Ecology	3
FS 110	Introduction to Food Science	3
FS 220	Food Safety and Quality	3
FS 436	Principles of Sustainability	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 338	Weed Control	4
PLSC 451	Vegetable Crops	3
POLS 364	Politics of the Environment	3
SOC 101	Introduction to Sociology	3
SOC 350	Food, Culture, and Society	3
SOIL 210	Food Systems and Healthy Lifestyles	3
SOIL 398	Internship	3
SOIL 400	Seminar	1-16
SOIL 417	Market Garden Practicum [1]	3-6
SOIL 427	Sustainable Food Systems	3
SOIL 446	Soil Fertility [1]	3
Select one of the following:		3-5
BIOL 154 & BIOL 155	Introductory Microbiology and Introductory Microbiology Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
BIOL 300	Survey of Biochemistry	
Total Hours		102-123

[1] Students must complete at least 3 credits in both SOIL 417 and SOIL 446.

Courses to total 128 credits for this degree

Water Science and Management (B.S.S.W.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
Soil and Water Systems Core		
ASM 315	Irrigation Systems and Water Management	3
AGED 406	Exploring International Agriculture	3
or SOC 350	Food, Culture, and Society	
COMM 101	Fundamentals of Oral Communication	2
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
GEOG 385	GIS Primer	3
MATH 143	College Algebra	3
PLSC 102	The Science of Plants in Agriculture	3
or REM 221	Principles of Ecology	
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 438	Pesticides in the Environment	3
STAT 251	Statistical Methods	3
Water Science Management Courses		

ASM 305	GPS and Precision Agriculture	3
BE 450	Environmental Hydrology	3
BE 452	Environmental Water Quality	3
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
FOR 326	Fire Ecology and Management	3
or FOR 462	Watershed Science and Management	
GEOL 111	Physical Geology for Science Majors	3
GEOL 101L	Physical Geology Lab	1
or GEOL 111L	Physical Geology for Science Majors Lab	
GEOL 309	Ground Water Hydrology	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
SOIL 415	Soil and Environmental Physics	3
SOIL 422	Environmental Soil Chemistry	3
SOIL 446	Soil Fertility	1-3
Select one of the following:		3
HYDR 409	Quantitative Hydrogeology	
HYDR 412	Environmental Hydrogeology	
Select one of the following:		3
FOR 472	Remote Sensing of the Environment	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
GEOG 475	Intermediate GIS	
Total Hours		91-93

Courses to total 128 credits for this degree

Program in Water Resources

Jodi Johnson-Maynard, Chair, Soil and Water Systems (216 Morrill Hall 83844-3002; phone 208-885-2018; water@uidaho.edu; www.water.uidaho.edu).

The interdisciplinary program in Water resources is administered by the College of Agricultural and Life Sciences.

The Water Resources Program offers M.S. and Ph.D. degrees in Water Resources with the ability to complete a concurrent M.S./J.D. in 4 years and a Ph.D./J.D. in 6 years. The three program option areas are Water Resources Engineering & Science, Water Resources Science & Management, and Water Resources Law, Management & Policy. The program trains students to address complex water resources issues by building disciplinary depth in concert with multidisciplinary breadth to understand focused problems and communicate across disciplines.

The Water Resources Program enjoys university-wide participation and forms a coordinated effort that provides interdisciplinary study options in water resources. Participants are drawn from the Colleges of Agriculture and Life Sciences (CALS), Business and Economics (CBE), Engineering (ENG), Law, (LAW), Science (COS), Letters, Arts, and Social Sciences (CLASS), and Natural Resources (CNR). The Program includes faculty from the Moscow campus, and Boise, Idaho Falls, Twin Falls and Coeur d'Alene/Post Falls Centers. Water Resources faculty collaborate with the Idaho Water Resources Research Institute and faculty at the Boise State University, Idaho State University and Washington State University.

Graduate Degree Programs

Students in the Water Resources Program must meet the general requirements set forth by the College of Graduate Studies (see Part Four) for the M.S. or Ph.D. degrees with the following exceptions. The degree of M.S. in Water Resources requires 29 credits of course work and completion of a thesis, equivalent to a minimum of 6 credits of Research and Thesis, for a total of 35 credits (note for transfers: an M.S. student must complete at least 18 of the total 35 required credits at the University of Idaho while matriculated in the College of Graduate Studies). The degree of Ph.D. in Water Resources requires a minimum of 39 credits of course work beyond the bachelor's degree and completion of a dissertation, for a total of 78 credits (note for transfers: A Ph.D. student must complete at least 39 of the 78 required credits at the University of Idaho while matriculated in the College of Graduate Studies). Both M.S. and Ph.D. degrees have higher credit requirements for course work than those of the College of Graduate Studies to allow students to develop depth in a water resources subject area while accommodating breadth in the interdisciplinary areas. Students in the Water Resources concurrent J.D. track must meet the general requirements set forth by the College of Graduate Studies and Water Resources Program for the M.S. or Ph.D. degrees and the College of Law for the J.D. The following sections summarize specific requirements for the three option areas as well as for the joint M.S./ J.D. and Ph.D./ J.D.

Thesis/Dissertation Requirements

Each thesis/dissertation shall reflect integration beyond a single discipline. Integration can be achieved throughout the thesis/dissertation, or through a separate interdisciplinary chapter (possibly co-authored) that specifically integrates methods and/or information from at least two distinct disciplines to advance the argument(s) in the thesis/dissertation. All chapters shall be integrated into a coherent whole. Each student shall evaluate the interdisciplinarity of their thesis/dissertation, at the proposal stage by completing the Interdisciplinary Thesis/Dissertation Proposal Approval form, and prior to the final defense by completing the Interdisciplinary Thesis/Dissertation Approval Form.

Committee Requirements

Each committee shall be composed of members from more than one discipline. For the M.S. a minimum of three members is required; for the Ph.D. a minimum of four members is required. All committee members must approve a) the student's study plan, b) the interdisciplinary component(s) of the thesis/dissertation proposal by signing the Interdisciplinary Thesis/Dissertation Proposal Approval Form, and c.) the interdisciplinary component(s) of the thesis/dissertation at the time of the final defense by signing the Interdisciplinary Thesis/Dissertation Approval Form.

Admission Requirements and Procedures

Admission to this program is highly competitive and recruitment is international in scope. Even exceptional applicants are admitted only when there is an opening with one of the participating faculty. As required by the College of Graduate Studies, all applicants must provide: official transcripts from all colleges and/or universities previously attended, a

resume or curriculum vitae, a statement of research interests that clearly identifies the research he or she would like to pursue at the University of Idaho, a statement of academic and career goals, and three letters of reference that speak to the applicant's aptitude for graduate research in water resources. For applicants for whom English is a second language, a TOEFL score of at least 600 (CBT 250) is required. Students can apply to the concurrent degree program only after application and admission to the UI College of Law and to the Water Resources Program.

To apply: Please go to the University of Idaho Graduate Admissions webpage at www.uidaho.edu/admissions/graduate or contact the Graduate Admissions Office, University of Idaho, P.O. Box 444266, Moscow, ID 83844-4266.

Water Resources Graduate Degree Programs

- Water Resources Engineering and Science Option (M.S.) (p. 139)
- Water Resources Engineering and Science Option (Ph.D.) (p. 139)
- Water Resources Science and Management Option (M.S.) (p. 141)
- Water Resources Science and Management Option (Ph.D.) (p. 142)
- Water Resources Law, Management and Policy Option (M.S.) (p. 140)
- Water Resources Law, Management and Policy Option (Ph.D.) (p. 140)
- Water Resources Concurrent J.D. Degree (p. 138)

Water Resources Concurrent J.D. Degree

Entry Requirements

Completion of requirements for admission to both the College of Law and the specific Water Resources option area is required for (M.S. and Ph.D.) admission to earn the Water Resources Concurrent J.D. Degree. Students are required to apply separately to the College of Law and to the Water Resources Program in the College of Graduate Studies, and on acceptance to each college, must apply to the concurrent degree program. Acceptance to both colleges does not have to occur simultaneously. A Steering Committee consisting of the Director of the Water Resources Program, the Associate Dean for Administration and Students of the College of Law, one non-law member of the Water Resources faculty, and one member of the Law faculty makes admission decisions to the concurrent degree program.

Common/Core Courses

All students seeking to earn the Water Resources concurrent J.D. degree are required to complete coursework as specified for the particular Water Resources Option Area for the M.S. or Ph.D., as well as coursework required by the Law School for a J.D.

Elective Courses

The student and faculty committee will select courses appropriate to satisfy the requirements of the Water Resources Program in the College of Graduate Studies and the J.D. in the College of Law.

Concurrent Degree Details

Students in the Water Resources concurrent J.D. track must meet all graduation requirements set forth by the College of Graduate Studies for the M.S. or Ph.D. degrees and the College of Law for the J.D. Each student shall have a "graduate committee." The student's graduate committee must meet the requirements of the College of Graduate Studies and must have at least one member from the faculty of the College of Law.

A total of 18 credits may be double counted for a J.D./M.S. concurrent degree, and a total of 21 credits may be double counted for a J.D./Ph.D. concurrent degree under the following guidelines:

- No more than 12 credits of M.S. and Ph.D. graduate school credit are allowed toward the J.D. degree. The courses must be approved by the student's advisor in the College of Law with the following guidelines: Courses approved for credit toward a J.D. must be complementary to an emphasis in water law, must enhance the candidates ability to serve clients and the legal profession in the area of water law, and must not be the equivalent substantive coverage to a course offered in the College of Law and available to the student.
- No more than 6 credits from Law are allowed toward the M.S. degree in Engineering & Science and Science & Management option areas, no more than 12 credits towards the M.S. degree in Law, Management & Policy option area, and no more than 9 credits toward the Ph.D. degree from the following list:

Code	Title	Hours
LAW 906	Natural Resource Law Seminar	3
LAW 907	Administrative Law	3
LAW 934	Land-Use Law and Planning	3
LAW 937	Wildlife Law and Policy	3
LAW 938	International Environmental and Water Law	3
LAW 939	Law, Science, and the Environment	2
LAW 942	Water Law I	1-2
LAW 946	Water and Energy Policy Seminar	2
LAW 947	Environmental Law	3
LAW 948	Public Lands and Resources Law	3
LAW 949	Native American Law	3
LAW 951	Environmental Policy	3
LAW 969	Water Law II	2
LAW 979	Native American Natural Resource Law	3

Satisfactory completion of both degrees is required to qualify for the exchange credit, the degrees are granted concurrently. The first year of study for concurrent M.S. or Ph.D. students must be exclusively in the College of Law. M.S. students are required to write a thesis. Ph.D. students are required to write a dissertation. If the student fails to complete the M.S. or Ph.D. in Water Resources, only 6 credits from the Water Resources Program are allowed toward the J.D. degree. If a student fails to complete the J.D. degree, the student must satisfy all requirements for the particular option area in the Water Resources Program to receive the M.S. or Ph.D. degree.

Questions regarding the concurrent degree program should be addressed to the Water Resources Program Coordinator (208-885-6113) or to the College of Law (208-885-6423).

Water Resources Engineering and Science Option (M.S.)

Master of Science. Major in Water Resources - Engineering and Science Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas. The common courses are:

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	3
WR 507	Integrated Water Resources Projects	3
500- Level Elective Course		
Select one 500-Level Elective Course [1]		3
Total Hours		10-25

[1] *(Or 900- level in LAW) In an option area outside the main option area (3 cr for Ph.D. only).*

Entry Requirements

Coursework in the following is required for M.S. and Ph.D. admission to the Water Resources Engineering & Science Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (minimum of 9 credits)
- Differential Equations (3 credits)
- Statistics for Scientists/Engineers (3 credits)
- Chemistry (minimum of 4 credits)
- Physics (minimum of 4 credits)
- Engineering Fluid Mechanics (minimum of 3 credits)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 cr):

Code	Title	Hours
BE 552	Environmental Water Quality	3
BE 558	Fluid Mechanics of Porous Materials	3
CE 421	Engineering Hydrology	3
CE 526	Aquatic Habitat Modeling [1]	3
CE 535	Fluvial Geomorphology and River Mechanics [1]	3
HYDR 509	Quantitative Hydrogeology	3
HYDR 576	Fundamentals of Modeling Hydrogeologic Systems	3
SOIL 515	Soil and Environmental Physics	3

[1] Either CE 526 or CE 535 may be used to satisfy this requirement, but not both.

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Science & Management or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

Water Resources Engineering and Science Option (Ph.D.)

Doctor of Philosophy. Major in Water Resources - Engineering and Science Option

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas. The common courses are:

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	3
WR 507	Integrated Water Resources Projects	3
Select one 500-level Elective course: [1]		3

[1] (Or 900- level in LAW) In an option area outside the main option area (3 cr for Ph.D. only).

Entry Requirements

Coursework in the following is required for M.S. and Ph.D. admission to the Water Resources Engineering & Science Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (minimum of 9 credits)
- Differential Equations (3 credits)
- Statistics for Scientists/Engineers (3 credits)
- Chemistry (minimum of 4 credits)
- Physics (minimum of 4 credits)
- Engineering Fluid Mechanics (minimum of 3 credits)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 cr):

Code	Title	Hours
BE 552	Environmental Water Quality	3
BE 558	Fluid Mechanics of Porous Materials	3
CE 421	Engineering Hydrology	3
CE 526	Aquatic Habitat Modeling [1]	3
CE 535	Fluvial Geomorphology and River Mechanics [1]	3
HYDR 509	Quantitative Hydrogeology	3
HYDR 576	Fundamentals of Modeling Hydrogeologic Systems	3
SOIL 515	Soil and Environmental Physics	3

[1] Either CE 526 or CE 535 may be used to satisfy this requirement, but not both.

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Science & Management or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

Water Resources Law, Management and Policy Option (M.S.)

Master of Science. Major in Water Resources - Law, Management and Policy Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas.

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	3
WR 507	Integrated Water Resources Projects	3
Select one 500-level Elective course: [1]		3

[1] *(Or 900- level in LAW) in an option area outside the main option area (3 credits for Ph.D. only).*

Entry Requirements

A background in government, public policy, or management is required for M.S. and Ph.D. admission to the Law, Management, and Policy Option Area. Students without an undergraduate degree in Political Science, Public Policy, Government, or entering the concurrent J.D. program, or related field may be granted provisional admission, but they are required to complete coursework (in addition to standard program and option area requirements) that demonstrates a minimum level of competency. This should include:

- American Government (6 credits at the 400 level)
- Public Policy (6 credits at the 400 level) **or**

Both requirements above may be met by taking equivalent law courses including:

- Constitutional Law and Civil Procedure (12 credits at the 900 level, as approved by major advisor)
- Subject to approval of the Water Resources Program curriculum committee, other relevant completed courses (or professional experience) may be substituted to meet these requirements.

Core Courses

All students in the Water Resources Law, Management & Policy Option Area are required to complete:

Research or Analytical Methods (3 cr determined in consultation with committee)

The student and committee select the appropriate mix of Law, Management and Policy courses from the following list. Law students are encouraged to take non-law courses. Non-law students are encouraged to take courses from at least two disciplines. M.S. students are required to take 6 credits, and Ph.D. students 9 credits from the following (6 or 9 cr):

Code	Title	Hours
AGEC 577	Law, Ethics and the Environment	3
NRS 573	Planning & Decision Making for Watershed Management	3
LAW 942	Water Law I (Max 2credits)	1-2
LAW 946	Water and Energy Policy Seminar	2
LAW 947	Environmental Law	3
LAW 951	Environmental Policy	3

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either Engineering & Science or Science & Management Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

Water Resources Law, Management and Policy Option (Ph.D.)

Doctor of Philosophy. Major in Water Resources - Law, Management and Policy Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas.

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	3
WR 507	Integrated Water Resources Projects	3
Select one 500-level Elective course: [1]		3

[1] *(Or 900- level in LAW) in an option area outside the main option area (3 credits for Ph.D. only).*

Entry Requirements

A background in government, public policy, or management is required for M.S. and Ph.D. admission to the Law, Management, and Policy Option Area. Students without an undergraduate degree in Political Science, Public Policy, Government, or entering the concurrent J.D. program, or related field may be granted provisional admission, but they are required to complete coursework (in addition to standard program and option area requirements) that demonstrates a minimum level of competency. This should include:

- American Government (6 credits at the 400 level)
- Public Policy (6 credits at the 400 level) **or**

Both requirements above may be met by taking equivalent law courses including:

- Constitutional Law and Civil Procedure (12 credits at the 900 level, as approved by major advisor)
- Subject to approval of the Water Resources Program curriculum committee, other relevant completed courses (or professional experience) may be substituted to meet these requirements.

Core Courses

All students in the Water Resources Law, Management & Policy Option Area are required to complete:

- Research or Analytical Methods (3 cr determined in consultation with committee)

The student and committee select the appropriate mix of Law, Management and Policy courses from the following list. Law students are encouraged to take non-law courses. Non-law students are encouraged to take courses from at least two disciplines. M.S. students are required to take 6 credits, and Ph.D. students 9 credits from the following (6 or 9 cr):

Code	Title	Hours
AGEC 577	Law, Ethics and the Environment	3
NRS 573	Planning & Decision Making for Watershed Management	3
LAW 942	Water Law I (Max 2 credits)	1-2
LAW 946	Water and Energy Policy Seminar	2
LAW 947	Environmental Law	3
LAW 951	Environmental Policy	3

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either Engineering & Science or Science & Management Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

Water Resources Science and Management Option (M.S.)

Master of Science. Major in Water Resources - Science and Management Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas. The common courses are:

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	3
WR 507	Integrated Water Resources Projects	3
Selecrt one 500-level Elective Course: [1]		3

1 *(Or 900- level in LAW) in an option area outside the main option area (3 cr for Ph.D. only).*

Entry Requirements

Coursework in the following is required for (M.S. and Ph.D.) admission to the Water Resources Science & Management Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (6 credits)
- Statistics (3 credits)
- Chemistry or Physics or Biology/Ecology (6 credits total)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 cr):

Code	Title	Hours
Aquatic Ecology		
FISH 503	Workshop	1-16
FISH 530	Stream Ecology	3
Fluvial Geomorphology and Aquatic Habitat		
CE 526	Aquatic Habitat Modeling (Max 6 credits)	3
CE 535	Fluvial Geomorphology and River Mechanics	3
Physical Hydrogeology		
BE 450	Environmental Hydrology [1]	3
FISH 515	Large River Fisheries [1]	2
Statistics		
ENVS 541	Sampling and Analysis of Environmental Contaminants	3
STAT 431	Statistical Analysis	3
Subsurface Hydrology		
HYDR 509	Quantitative Hydrogeology [2]	3
SOIL 515	Soil and Environmental Physics [2]	3
Water Quality		
BE 552	Environmental Water Quality	3

1 Either BE 450 or FISH 515 may be used to satisfy this requirement, but not both.

2 Either HYDR 509 or SOIL 515 may be used to satisfy this requirement, but not both.

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Engineering & Science or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

Water Resources Science and Management Option (Ph.D.)

Doctor of Philosophy. Major in Water Resources - Science and Management Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas.

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	3
WR 507	Integrated Water Resources Projects	3
Select one 500-level Elective Course [1]		3

1 *(Or 900- level in LAW) in an option area outside the main option area (3 cr for Ph.D. only).*

Entry Requirements

Coursework in the following is required for (M.S. and Ph.D.) admission to the Water Resources Science & Management Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (6 credits)
- Statistics (3 credits)
- Chemistry or Physics or Biology/Ecology (6 credits total)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 cr):

Code	Title	Hours
Aquatic Ecology		
FISH 503	Workshop	1-16
FISH 530	Stream Ecology	3
Fluvial Geomorphology and Aquatic Habitat		
CE 526	Aquatic Habitat Modeling (Max 6 credits)	3
CE 535	Fluvial Geomorphology and River Mechanics	3
Physical Hydrogeology		
BE 450	Environmental Hydrology [1]	3
FISH 515	Large River Fisheries [1]	2
Statistics		
ENVS 541	Sampling and Analysis of Environmental Contaminants	3
STAT 431	Statistical Analysis	3
Subsurface Hydrology		
HYDR 509	Quantitative Hydrogeology [2]	3
SOIL 515	Soil and Environmental Physics [2]	3
Water Quality		
BE 552	Environmental Water Quality	3

1 *Either* BE 450 *or* FISH 515 *may be used to satisfy this requirement, but not both.*

2 *Either* HYDR 509 *or* SOIL 515 *may be used to satisfy this requirement, but not both.*

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Engineering & Science or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

COLLEGE OF ART AND ARCHITECTURE

Shauna Corry, Dean (AA 202 83844-2461; 208-885-5423).

The College of Art and Architecture was re-established in October 2005, by mandate of the State Board of Education, to bring together the accredited programs in art and design, architecture, landscape architecture, interior design, and virtual technology and design. All majors will be engaged in professionally accredited, studio-based programs through inspired teaching and individual attention, developing in each student their unique qualities and qualifications for success. The students will also be connected with communities and other "clients" to gain immediate experience addressing real-world problems, and the rewards of making a difference, and inspired to thrive in a world of change by being Creative, Collaborative Leaders, within and outside their disciplines.

This combination of strong, accredited programs increases the resources available to students, and brings together a community of scholars with a common dedication to a sustainable, high quality physical environment. Additionally, this relationship promotes opportunities for integration, and prepares students for the interdisciplinary nature of contemporary practice. The quality of these programs has earned the college an excellent and widespread reputation.

Aptitudes

Students likely to succeed in the design and visual arts are those with a serious purpose and willingness to work hard. Equally important is the ability to visualize in three dimensions. Students need to be creative, inquisitive, and be able to effectively communicate both visually and verbally. Students should also value cultural and social diversity and be willing to learn in an interdisciplinary and cooperative manner. Some of the programs also require an ability and interest in the natural sciences and math.

Faculty

Faculty are the key to the quality of the educational experience obtained through the college programs. Combining the energies of a well recognized, scholarly and creative faculty with the innovative talents of experienced architects, artists, designers, and landscape architects, the college develops the skills of future professionals by preserving the balance between the theoretical and practical aspects in each of the programs represented. Within the design professions focus is placed on the application of contemporary design issues with an emphasis on environmental responsibility and the role of history and culture in meeting the diverse needs of a global society.

Facilities

The College of Art and Architecture is housed in several buildings located in the very center of the university campus. These buildings are in close proximity to university classroom buildings, library, administrative offices, and recreational facilities. The Ridenbaugh Hall Gallery on campus and the Prichard Gallery in downtown Moscow are administered by the college and provide support to all college disciplines. There are also two facilities located in Boise: The Idaho Urban Research and Design Center (IURDC) and the Integrated Design Lab (IDL).

Fees

The State Board of Education has granted approval to charge a professional fee to all College of Art and Architecture students on a semester basis over and above general tuition and fees. This fee is used to directly support technology and computing for students and faculty, supplement operating budgets, hire temporary faculty, support the college's visual and design resource centers, cover professional accreditation costs, and partially support student field trips, clubs, and guest lecturers. See "Fees and Expenses (p. 62)" of this catalog.

Preparation and Admission

A statement of undergraduate and graduate admission requirements is included in this catalog. Students who contemplate entering the College of Art and Architecture with advanced standing from a junior college or other institution should complete as many of the first year and sophomore requirements listed in the curricula as possible. Certain courses are prerequisites to many advanced courses, and their omission will delay graduation. Certain grade-point averages and other conditions are required for entering into particular programs in the college. See the preface to each curriculum.

Scholarships and Awards

Scholarships and awards are available to students and prospective students.

See Student Financial Aid Services (http://www.uidaho.edu/financialaid). Also, visit the College of Art and Architecture (http://www.uidaho.edu/caa) website or contact specific program administrators.

University Requirements . See Regulation J (p. 91) for the all-university requirements for graduation.

College Requirements . See specific degree requirements within each program.

Upon registering for any course offered in this college, the student agrees that the program offering the course may retain work completed by the student. The program will make retained work available to the student for photographing.

Programs

There are six programs within the College of Art and Architecture:

- Architecture,
- Interior Architecture and Design,
- Art and Design,
- Landscape Architecture,
- Virtual Technology and Design and
- Bioregional Planning and Community Design.

Each program represents unique disciplines that are integrated throughout their curriculum, research and service mission.

Graduate Programs

Please refer to the specific programs.

Art and Architecture

Architecture, Randall Teal rteal@uidaho.edu, Program Head

Art & Design, Greg Turner-Rahman gtrahman@uidaho.edu, Program Head

Bioregional Planning and Community Design, Jacobus (Jaap) Vos jvos@uidaho.edu, Program Head

Interior Architecture and Design, Rula Awwad-Rafferty rulaa@uidaho.edu, Program Head

Landscape Architecture, Beth Scott bscott@uidaho.edu, Program Head

Virtual Tech & Design, John Anderson jwa@uidaho.edu, Program Head

There are six programs within the College of Art and Architecture: Architecture, Bioregional Planning and Community Design, Interior Architecture and Design, Art and Design, Landscape Architecture, and Virtual Technology and Design. Each program represents unique disciplines that are integrated throughout their curriculum, research and service mission. All undergraduate students majoring in any of the programs in art and architecture (architecture, interior architecture and design, art and design landscape architecture and virtual technology and design) are required to take the three classes that comprise the College Foundation Program.

Fees & Expenses

The State Board of Education has granted approval to charge a professional fee to all College of Art and Architecture students on a semester basis over and above general tuition and fees. This fee is used to directly support technology and computing for students and faculty, supplement operating budgets, hire temporary faculty, support the college's visual and design resource centers, cover professional accreditation costs, and partially support student field trips, clubs, and guest lecturers. See "Fees and Expenses (p. 62)" in this catalog.

Computer Technology

Students in architecture, interior architecture and design, art and design, landscape architecture and virtual technology and design are required to have their own computer and appropriate software for use in their studies. Specific technology requirements as well as guidelines and recommendations are posted on each program's web site.

UDC

The Urban Design Center (UDC) is an educational and outreach function for the Programs of Architecture and Landscape Architecture, Bioregional Planning, and the College of Art and Architecture. Graduate students in architecture, landscape architecture, bioregional planning and art and design are able to live and study in Boise for one or two years while completing graduate programs. In addition to course work in architecture, landscape architecture, sustainable urban landscapes, and urban design, students collaborate with architects, landscape architects and other design professionals, developers, urban planners and community and business leaders on projects and research that help shape Boise's cultural and metropolitan identity. Project partners include governmental agencies, arts and cultural organizations, businesses, nonprofits and residential communities.

IDL

The Integrated Design Lab, located in Boise, is dedicated to the development of high-performance, energy-efficient buildings in Idaho and eastern Oregon. Faculty, staff and student employees have opportunities there to work together on significant outreach and research projects and collaborate closely with faculty and students at the IURDC.

The Architecture and Interior Architecture and Design curricula lead to a B.S. in Architecture (B.S.Arch.), Master of Architecture (M.Arch.), Bachelor of Interior Architecture and Design (B.I.A.D.) and the MS Architecture.

Architecture

The University of Idaho Architecture Program offers the following NAAB-accredited professional degree program: Master of Architecture (M.Arch.), which builds off of the undergraduate B.S. Architecture via the seamless professional degree path. The architecture program's next accreditation visit is in 2024.

The Bachelor of Science in Architecture (B.S.Arch.), when combined with the Master of Architecture (M.Arch.) prepares students for a career as a licensed architect, as well as for careers in architecture, community design, urban design, consulting in energy and lighting, sustainable development and related fields. Students first earn the B.S.Arch., which qualifies them to seek non-professional positions, or to move seamlessly into the accredited two-year Master of Architecture program.

For undergraduate students, the pre-professional program (B.S. Arch.) begins with foundation courses in art and architecture as well as university core requirements, and then transitions to focus on architectural design, history and theory of architecture, environmental controls, structures, construction, and urban theory. The accredited M. Arch. Includes courses on technical systems integration and professional practice, and provides students the opportunity to pursue course work germane to their own interests in architecture, culminating in a self-defined graduate project.

Qualified students from other B.S. Arch. degrees generally qualify for the 2-year M.Arch path while students holding non-architecture degrees generally qualify for the 3+ M.Arch path. All students with undergraduate degrees seeking the M.Arch should apply directly to the graduate program via the College of Graduate Studies application process. Current undergraduate students from other programs, colleges, or universities may transfer into the seamless M.Arch program at various points in the curriculum, interested students should contact the architecture program directly.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 8-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards. Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Interior Architecture and Design

The Bachelor of Interior Architecture and Design (B.I.A.D.) is a professional degree, nationally accredited by the Council for Interior Design Accreditation (CIDA). It prepares students for a successful career as an interior designer including valuable interdisciplinary skills and knowledge in the closely related field of architecture as

well as environmentally and socially responsible design. Due to the unique configuration and relationship between Architecture and Interior Architecture and Design, students in the IAD program graduate with a major in Interior Architecture and Design and a minor in Architecture. Students can also minor in other disciplines of their choice. Students have the option of majoring in interior architecture and design and architecture over a period of seven years, thus graduating with a B.I.A.D. and an M.Arch.

After the first year of study, academic achievement is reviewed to determine eligibility for continued study in interior architecture and design. Another review is conducted at the end of the second year of study.

Art and Design

The art and design curriculum at the University of Idaho leads to a Bachelor of Fine Arts, (B.F.A.) in Studio Art, a Bachelor of Arts (B.A.) in Art, and a Master of Fine Arts (M.F.A.) in art. This curriculum provides a broad base from which students may pursue a number of different career options. Students are required to complete a core of courses (the art core) designed to ensure an understanding of the historical and theoretical basis of art and design, while developing general competency in various media. They become strong visual thinkers equipped with both the creative and intellectual skills to succeed in a variety of careers in the global art and design communities. Students of art and design experience an integrated curriculum that fosters theoretical and professional growth, while promoting a profound understanding of the potential of visual work in its many contexts.

The B.F.A. degree is designed for those students who wish to develop professional careers in studio art and design. Requirements for the degree are stringent, and include intense involvement in studio work in the senior year, closely mentored by all faculty members, culminating in the development of a portfolio and written statement in support of a professional exhibition. Because the B.F.A. degree is a professional degree, often preparatory to pursuit of a Master of Fine Arts (M.F.A.) degree, students must maintain a minimum 2.75 GPA.

The B.A. degree with a major in art is designed to ensure a broad, liberal education with an emphasis in art. Students pursuing this degree must meet the B.A. degree requirements listed in the College of Letters, Arts, and Social Sciences section of this catalog, including a foreign language. Emphasis areas include ceramics, drawing, graphic design, communication design, painting, printmaking and sculpture.

The M.F.A. degree is the terminal degree for studio artists and designers who want to deepen their current professional practice or teach at the college or university level. Graduate students are assigned studio space in the program's Graduate Art Studio (GAS House), as space and individual requirements permit. Priority is given to full-time graduate students. Admission requirements for the M.F.A. include a minimum grade-point average of 3.0 and an undergraduate degree in a studio area, or its equivalent as determined by the Art and Design program graduate faculty. Fewer than 60 credits in studio courses, and 12 in art history (or criticism, theory, or history in a related field) at the undergraduate level is considered a deficiency. Applicants with these deficiencies who are admitted to the M.F.A. program may be required to include deficiency course work as part of their graduate program. Deficiency courses are required but do not count towards satisfying degree requirements.

All applicants to the graduate program apply using the Graduate Admissions online application process. Applicants are required to submit a comprehensive portfolio of work, a written statement of career goals, three letters of recommendation and official transcripts from all previously attended colleges/universities. Portfolios may be in digital or CD form and should include 20 clearly labeled images and image list in a PDF file.

The Art and Design program is accredited by the National Association of Schools of Art and Design (NASAD).

Landscape Architecture

The practice of Landscape architecture is diverse with career opportunities in the traditional landscape architecture firm, interdisciplinary planning, engineering or architecture firms, urban, regional and national public agencies as well non-governmental organizations such as land and watershed trusts. Landscape architectural education at the University of Idaho is enhanced by the ecology of the Inland Northwest landscape, opportunities for integrated professional education in the College of Art and Architecture and the overall academic diversity of a land grant institution.

To achieve the professional M.L.A. degree a first year student must complete a five and one-half year seamless program that includes the Bachelor of Science, Landscape Architecture (B.S.L.A.) degree and the first professional Master of Landscape Architecture (M.L.A.) degree. After the second year of study, academic achievement is reviewed to determine eligibility for continued study in the program. Students are required to submit a portfolio of their work at this time.

Upon achieving senior standing, students apply for admission to the graduate professional M.L.A. In accordance with College of Graduate Studies requirements, these students must have a 3.0 GPA to be considered for admission. Once admitted to the M.L.A program, students work toward completion of both the B.S.L.A. & M.L.A., receiving both degrees upon completion of the five and one-half year curriculum.

Transfer students with baccalaureate degrees in a program other than landscape architecture may be admitted, based on their transcripts, directly into the M.L.A. professional program. The three-year program requires a minimum of 36 graduate level credits and 90 credits overall. Transfer students without an undergraduate degree are admitted to the B.S.L.A program before being considered for the M.L.A. program.

Bioregional Planning and Community Design

The Master of Science in Bioregional Planning and Community Design (BIOP) is an interdisciplinary, professional degree designed to prepare future leaders for roles in planning within both the public and private sectors and from local to international organizations. The BIOP program is distinguished from other planning programs around North America in three ways:

1. it represents a university-wide, interdisciplinary approach to planning involving eight UI colleges and nine academic departments;
2. it fully integrates education and research with community outreach; and
3. it supports, promotes and advances bioregional approach to planning that focuses on sustainable development, sustainable efficient conservation planning and management, and sustainable human quality-of-life within and across bioregions.

Students have a unique opportunity to integrate sustainable approaches to planning in a rapidly developing region of the Intermountain West.

The curriculum includes a common core of required courses that link knowledge with practice, and fundamental theories with skills. Restricted elective requirements build on this core knowledge and skill while providing flexibility for the students to focus on their interest areas. Students also select one of several areas of specialization:

1. Regional Planning and Multi-jurisdictional Governance,
2. Community Design,
3. Community and Economic Development,
4. Transportation and Sustainable Infrastructure,
5. GIS and Spatial Analysis,
6. Natural Hazards and Climate Change Mitigation and Adaptation or,
7. Student designed option.

These specializations provide connections between the BIOP program and the disciplines within the participating colleges and departments.

A 15-credit professional certificate is also available in the BIOP program. The certificate is designed for graduate students enrolled in various professional disciplines (e.g., transportation engineering, environmental and natural resource management, architecture, landscape architecture, public administration) who want some expertise in planning. Students earning the certificate will gain knowledge, skills, and values in bioregional planning and be able to effectively employ planning concepts and principles within their discipline.

Questions regarding the BIOP M.S. programs should be directed to bioregionalplanning@uidaho.edu.

The Bioregional Planning and Community Design M.S. degree requires the completion of 44 credits of coursework. Specific requirements are: core requirements (20 cr); additional competency via restricted elective requirements (12 cr); area of specialization (9 cr); and final project or thesis. The final project can take the form of a professional report or a client report. See the BIOP Student Handbook for specific course requirements.

Admission to the graduate program is based on: ability to complete graduate-level work evidenced by undergraduate transcripts; the applicant's statement of research and career objectives; the compatibility of the student's objectives with program mission; and availability of graduate faculty to act as major advisor for the applicant. The GRE, applicant's statement of objectives, and three letters of recommendation and resume are required.

International Study

All students in the program are normally required to participate in a landscape architecture, international study abroad program. (Students are encouraged to work closely with their faculty advisor in planning for these programs as there are several options.) International study abroad is subject to national and international conditions that may impact the college's ability to offer or facilitate a program.

Program options and opportunities

Graduate students in landscape architecture have the opportunity to study at the University of Idaho, Moscow campus or at the College of Art and Architecture Urban Design Center in Boise. Students in Boise work together with their peers in architecture in a year-long integrated design studio focusing on sustainable urban design and urban systems. Students at the Moscow campus have the opportunity to participate in an interdisciplinary studio focusing on community and rural design with graduate students in Art and, Design, Architecture and Interior Architecture and Design and Bioregional Planning and Community Design. Individual faculty-directed off campus community internships in cooperation with a practitioner mentor are also available.

Elective Tracks

All landscape architecture students in both the B.S.L.A. and the M.L.A. program will work with their advisor to select an elective track that supports their specific interest in one of the project scales of the profession of landscape architecture. These normally include the site scale, neighborhood and community scale and the urban or bioregional scale. Electives may be chosen from the natural and social sciences as well as the humanities and the arts and will assist in gaining skills and knowledge that support the graduate studio or thesis.

Field Trips

All B.S.L.A. landscape architecture majors are required to take part in one field trip in the third or fourth year of the program. All M.L.A. majors are required to take part in one field trip in the first or second year of the program. These three to five day trips are usually to Northwest cites such as Portland, Seattle and San Francisco. Often one of these trips is a visit to the American Society of Landscape Architects (ASLA) national conference when the meeting is held in the western region of the country.

The Virtual Technology and Design

(VTD) program offers a B.S. degree, which emphasizes an interdisciplinary education, through a curriculum that integrates emerging technologies with the process of design. VTD is accredited through the National Association of Schools of Art and Design.

VTD recognizes the demand for design professionals who have the interdisciplinary knowledge and skills necessary to conceive and construct electronically mediated solutions for an array of issues that give form and substance to our daily activities. As electronic media increasingly intersects with human interaction, the quality of access to information, services and the opportunity to participate fully in our emerging communities hinge in part on the kinds of solutions imagined and environments planned by these virtual designers. The virtual designer serves both defined and yet to be defined industries. They bring a unique combination of experiential, spatial, critical thinking and technical skills to problems that range from the need to interactively visualize complex information systems to the multi-dimensional modeling requirements of virtual environments for commercial, entertainment, educational or social applications.

The VTD student is a person excited by the possibilities of combining design with emerging technologies. Like other design students, VTD students are intrigued with inquiry, discovery and the development of creative solutions that responds to human needs. However, they are further intrigued by the possibility of designing in a virtual or augmented reality rather than exclusively with bricks and mortar or more traditional media.

Graduates of the program will be prepared with the intellectual and management tools, as well as the technical and design skills, required of professionals who wish to contribute as leaders in the digital realm and design communities. Their understanding of the implications of electronically mediated information, communication and virtual environments on human activities will enable them to significantly

influence the quality of everyday life. A VTD graduate is a designer who utilizes emerging technologies and theories.

Computer Technology

All Virtual Technology and Design majors are required to provide their own laptop computer and appropriate software available for use in all VTD classes. Specific technology requirements as well as guidelines and recommendations are posted on the VTD web site at www.uidaho.edu/caa/vtd.

Majors

- Architecture (B.S.Arch.) (p. 147)
- Interior Architecture and Design (B.I.A.D.) (p. 150)
- Studio Art and Design (B.F.A.) (p. 152)
- Art (B.A.) (p. 149)
- Landscape Architecture (B.S.L.A.) (p. 151)
- Virtual Technology and Design (B.S.) (p. 153)

Minors

- Architecture Minor (p. 148)
- Art Minor (p. 149)
- Interior Design Minor (p. 151)
- Landscape Architecture Minor (p. 152)

Certificates

- Virtual Technologies Undergraduate Academic Certificate (p. 154)

Architecture and Interior Design Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies (p. 232) and the Architecture and Interior Design program.

- Architecture (M.Arch.) (p. 148)
- Integrated Architecture and Design (M.S.) (p. 150)

Interior Design (B.I.D)

Seamless B.I.D. Interior Design and M.Arch. Program

Students who fulfill the requirements for the B.I.D. in interior design, and have already been admitted into the third year undergraduate architecture program, may apply for admission to the Master of Architecture program. Several architecture course requirements may be waived in lieu of interior design course work. This degree track may be completed in no less than seven years. Details are available from the Architecture program.

Art and Design Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and the Art and Design program. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Art (M.F.A.) (p. 149)

Landscape Architecture Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Landscape Architecture program. See the College of Graduate Studies (p. 232) section for the general requirements applicable to the degree.

- Landscape Architecture (M.L.A.) (p. 152)

Art Core

Code	Title	Hours
ART 100	World Art and Culture	3
ART 110	Integrated Art and Design Communication	2
ART 112	Drawing as Integrated Design Thinking	2
ART 111	Drawing I	3
ART 121	Integrated Design Process	2
ART 122	Art & Design Process	3
Total Hours		15

Architecture (B.S.Arch.)

Architecture Undergraduate Curricular Requirements

The four-year curriculum leading to a B.S.Arch. degree provides the undergraduate, pre-professional coursework that qualifies students for entry level architectural work and prepares them to pursue the NAAB accredited, professional M. Arch degree via the seamless degree path.

Admission to the B.S. Arch program is competitive. Students apply to the program after the first year of study, where academic achievement is reviewed to determine eligibility for continued study in architecture. Another application occurs at the end of the second year of study. Here, applicants to the third year are required to submit a portfolio containing examples of graphic work in art and architecture. The deadline for both second and third year applications is mid-May, with the results of the evaluation being made known to applicants by the first week of July.

Students accepted into the years three and four of the curriculum are required to maintain a minimum 3.0 GPA and to receive a grade of "C" or higher in architectural design studios. Students who do not meet these criteria are ineligible for acceptance to the M.Arch. degree program and the College of Graduate Studies. (Provisional admittance to the M. Arch. program can be granted, with permission, for students with GPAs of 2.8 cumulatively, or 3.0 over the last 60 credit hours. See below for M.Arch. degree requirements.)

Note: Program permission is required for admittance into architecture design studios (ARCH 253, ARCH 254, ARCH 353, ARCH 354, and ARCH 454) and students must achieve a minimum grade of C in the previous studio course to enroll in the next sequential studio course.

Note: Students who have not been accepted into the third year curriculum may not enroll in architectural design courses. Students who have left the program may only re-enter the curriculum by application to the college admissions committee.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ARCH 151	Introduction to the Built Environment	3
ARCH 154	Introduction to Architectural Graphics	3
ARCH 243	Media in Architecture	3
ARCH 253	Architectural Design I	4
ARCH 254	Architectural Design II	4
ARCH 266	Materials and Methods	3
ARCH 353	Architectural Design III	6
ARCH 354	Architectural Design IV	6
ARCH 361	Structural Systems I	3
ARCH 362	Structural Systems II	3
ARCH 385	Global History of Architecture	3
ARCH 386	Global History of Architecture II	3
ARCH 388	Architectural Theory	3
ARCH 454 & 454	Architectural Design: Vertical Studio and Architectural Design: Vertical Studio (Must be taken twice for credit)	12
ARCH 461	Building Assemblies	3
ARCH 463	Environmental Control Systems I	3
ARCH 463L	Environmental Control System I Lab	1
ARCH 464	Environmental Control Systems II	3
ARCH 464L	Environmental Control System II Lab	1
ARCH 483	Urban Theory and Issues	3
ART 110	Integrated Art and Design Communication	2
ART 112	Drawing as Integrated Design Thinking	2
ART 121	Integrated Design Process	2
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Select one of the following:		3-4
CS 112	Computational Thinking and Problem Solving	
PHIL 202	Introduction to Symbolic Logic	
STAT 251	Statistical Methods	
Total Hours		86-87

Courses to total 124 credits for this degree (including at least 3 cr of 200-level or above courses taken outside the disciplines of architecture; landscape architecture; art and design; interior design; and virtual technology and design; and 3 cr of 200-level or above courses taken within the disciplines; and at least 3 credits of 200-level or above courses taken in any discipline. Credits earned in completion of an academic minor may be substituted).

Architecture (M.Arch.)

Master of Architecture. Major in Architecture

Candidates must fulfill the requirements of the College of Graduate Studies (p. 232) and the Architecture program. Twenty-four of the 45 credits required for this degree must be at the 500 level, including the following courses: ARCH 510 (2 cr), ARCH 553 (6 cr), ARCH 554 (6 cr), and ARCH 556 (6 cr). The remaining courses required to complete credits for this degree may be 400- or 500-level architecture courses or 300- or 400-level courses in supporting areas.

Required courses include:

Code	Title	Hours
ARCH 510	Graduate Project Seminar	3
ARCH 553	Integrated Architectural Design	6
ARCH 554	Architectural Design: Vertical Studio	6
ARCH 556	Graduate Project	6
ARCH 568	Technical Integration in Design	3
ARCH 575	Professional Practice	3
Select Graduate Architecture Electives from the following:		6
ARCH 502	Directed Study	
ARCH 504	Special Topics	
ARCH 511	Native American Architecture	
ARCH 512	Identity and Place in Global Space	
ARCH 520	Architectural Research Methods	
ARCH 521	China Program Preparation Seminar	
ARCH 522	China's Urbanization Seminar	
ARCH 523	Cultural & Ethical Issues in Global Architectural Practice	
ARCH 552	Alternate Graduate Design Experience	
ARCH 570	Natural Lighting	
ARCH 571	Building Performance Evaluation	
ARCH 573	Daylight Design and Simulation	
ARCH 574	Building Performance Simulation for Integrated Design	
ARCH 580	British Green Architecture	
ARCH 585	Urban Design Seminar	
ARCH 599	Non-thesis Master's Research	
Total Hours		33

Equivalents must be approved by the graduate program coordinator. Graduate students without an undergraduate architecture degree may also earn an accredited M.Arch. degree. Those students are placed in the program according to their academic qualifications, and depending on the background of the applicant, up to six years of study may be required to complete the degree requirements. Candidates must fulfill the requirements of the College of Graduate Studies (p. 232) and the Architecture (p. 147) program. Master of Architecture degree requirements are listed above.

Architecture Minor

Code	Title	Hours
ARCH 151	Introduction to the Built Environment	3
ARCH 385	Global History of Architecture	3
ARCH 386	Global History of Architecture II	3
Select 10 credits from the following:		10
ARCH 154	Introduction to Architectural Graphics	
ARCH 253	Architectural Design I	
ARCH 254	Architectural Design II	
ARCH 266	Materials and Methods	
ARCH 388	Architectural Theory	
ARCH 463	Environmental Control Systems I	

ARCH 464	Environmental Control Systems II	
ARCH 483	Urban Theory and Issues	
Total Hours		19

Courses to total 19 credits for this minor

Art (B.A.)

Computer Equipment

Beginning with the first year of the program, all art and design students are required to have their own laptop computer and appropriate software for use in their courses. Please refer to the College of Art and Architecture's (http://www.uidaho.edu/caa) website for specifics.

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general requirements for the B.A. degree, the art core, and a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in one of the following areas: ceramics, graphic design, interaction design, painting, sculpture, printmaking, or photography/digital imaging and:

Code	Title	Hours
Art Core (p. 147)		14
Major Requirements		44-47
Total Hours		58-61

Major Requirements

Code	Title	Hours
ART 303	Contemporary Art and Theory	3
ART 407	New Media	3
ART 410	Professional Practices	2
Select 6 credits from the following Art History Electives with advisor approval:		6
ART 205	Visual Culture	
ART 213	History and Theory of Modern Design	
ART 217	Ancient & Pre-Modern Art	
ART 302	Modern Art and Theory	
ART 313	History and Theory of Modern Design	
ART 323	History of Typography	
ART 382	History of Photography	
ART 409	Visual Studies	
Select 15-18 credits from the following 200-level studio courses: [1]		15-18
ART 211	Life Drawing	
ART 216	Digital Tools	
ART 221	Introduction to Graphic Design	
ART 222	Introduction to Typography	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Interaction Design I	
ART 272	Experiential Design I	
ART 280	Understanding Photography	
Select 15 credits from the following 300-level studio courses: [2]		15
ART 321	Graphic Design: Concepts (Max 6 credits)	
ART 322	Graphic Design: Studio (Max 6 credits)	
ART 330	Intermediate/Advanced Painting (Max 12 credits)	
ART 340	Intermediate/Advanced Sculpture (Max 9 credits)	
ART 350	Intermediate/Advanced Printmaking (Max 12 credits)	
ART 360	Intermediate/Advanced Ceramics (Max 9 credits)	
ART 370	Intermediate/Advanced Interaction + Experiential Design (Max 9 credits)	
ART 380	Digital Imaging	
ART 390	Mixed Media (Max 12 credits)	
ART 411	Advanced Studio Practice (Max 6 credits)	
ART 491	Information Design	
Total Hours		44-47

Courses to total 120 credits for this degree

1 *Students pursuing a studio emphasis in graphic design must include* ART 222 Introduction to Typography*; and interaction design majors must include* ART 272 Experiential Design I.

2 *At least 6 credits must be taken in one studio area, i.e.,* ART 330 Intermediate/Advanced Painting*; no more than 6 credits in one studio area may be counted toward this requirement.*

Art (M.F.A)

Master of Fine Arts. Major in Art.

The Master of Fine Arts degree is a 60-credit degree designed for students wishing to prepare themselves for a career as a professional artist or art teacher at the college or university level.

The M.F.A. is the terminal degree in studio art and requires a thesis. The major portion of the student's thesis consists of a one-person exhibition of professional quality work supported by a written statement on the nature of the work. The statement includes an explanation of the evolution of the conceptual or theoretical basis for the work (including historical and contemporary examples and influences), and a discussion of the experiments, processes, and technical experiments that were used in the evolution of the work.

Areas of concentration are: painting, drawing, sculpture, ceramics, graphic design, printmaking, and interface design, or a direction may be developed that combines two or more of these areas. Students wishing to work in an area other than those listed above must clearly state their intention in their statement of goals or intent upon application for admission to the M.F.A. program.

A final oral examination is required (and may be supplemented with a written examination at the discretion of the graduate committee).

Art Minor

Code	Title	Hours
ART 100	World Art and Culture	3
ART 110	Integrated Art and Design Communication	2
ART 121	Integrated Design Process	2
ART 112	Drawing as Integrated Design Thinking	2
ART 111	Drawing I	3
ART 122	Art & Design Process	3

Select 200 and 300 level Art Studio and/or Art History courses:	6
Total Hours	21

Courses to total 20 credits for this minor

Art courses used to meet the Art Minor cannot be taken under the pass/fail option.

Integrated Architecture and Design (M.S.)

Master of Science. Major in Integrated Architecture and Design.

The Master of Science offers a research program open to candidates who hold a non-professional degree in any design discipline and/or a professional degree in architecture or landscape architecture, or other degree holders who desire to embark on a career in consulting, research, and/or scholarship. The program is designed for independent study within one or more of the following areas of specialization: Visualization, Environment and Behavior, Urban Design, Community Design and Planning, Universal Design, Landscape Design, Media Design, and Sustainable Architecture and Planning. Graduate students work closely with their major professor and graduate committee to develop a detailed program of study that borrows from three disciplines within the College of Art and Architecture as well as studies with other programs throughout the university. Acceptance into the program is contingent on the Graduate Committee's review of the candidate's statement of intent describing the area of specialization in which the candidate will focus, three letters of recommendation, and a portfolio. The Graduate School requires a completed application, university transcripts, a resume, and an official TOEFL score, when appropriate. Prospective students are encouraged to first correspond with the Chair of the MSIAD Committee about their interests. The chair will then direct the applicant to further sources if needed. The M.S. degree with a major in Integrated Architecture and Design requires the completion of 30 credits of course work in either a thesis or non-thesis (project-based) option.

Thesis option:

Code	Title	Hours
ARCH 500	Master's Research and Thesis	1
ARCH 520	Architectural Research Methods	3
Select 12 credits in Graduate Seminars in three disciplines [1]		12
Select 5-7 credits of electives		5-7
Total Hours		21-23

[1] *Students must have at least 1 seminar in the CAA and at least one seminar from outside the college.*

Non-thesis option:

Code	Title	Hours
Select 12 credits of graduate design reserach as approved by major professor		12
Select 12 credits in Graduate Seminars in three disciplines [1]		12
Select 6 credits of electives		6
Total Hours		30

[1] *Students must have at least 1 seminar in the CAA and at least one seminar from outside the college.*

Interior Architecture & Design (B.I.A.D.)

The Interior Architecture and Design program is a four-year professional program that leads to a Bachelor of Interior Architecture. Our mission is to serve as Idaho's only public, accredited, professional interior architecture and design program by providing a strong interdisciplinary design experience through a curriculum accredited by the Council for Interior Design Accreditation (CIDA), allied research, and outreach opportunities. We prepare our graduates to serve society through their professional and community work.

Due to the unique configuration and relationship between Architecture and Interior Architecture and Design, students in the Interior Architecture and Design program graduate with a major in Interior Architecture and - with one additional course - a minor in Architecture. Students can also minor in other disciplines of their choice. Students have the option of completing seamless degrees in Interior Architecture and Design and Architecture over the period of seven years, thus graduating with a B.I.A.D. in Interior Architecture and an M.Arch. in Architecture. Students must hold a minimum GPA of 2.50. A portfolio and transcript review will be conducted in the spring of the sophomore year. Results of the evaluation are made known to applicants in July.

Program(s) permission is required for admittance into Architecture and Interior Architecture and Design studio courses:

Code	Title	Hours
ARCH 253	Architectural Design I	4
ARCH 254	Architectural Design II	4
IAD 152	Interior Design I	3
IAD 254	Architectural Design II	4
IAD 351	Interior Design III	6
IAD 352	Interior Design IV	6
IAD 451	Interior Design V	6
IAD 452	Interior Design VI	6

and students must achieve a minimum grade of C in the previous Interior Architecture and Design studio course to enroll in the next sequential studio course.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ARCH 385	Global History of Architecture	3
or ARCH 386	Global History of Architecture II	
ARCH 151	Introduction to the Built Environment	3
ARCH 154	Introduction to Architectural Graphics	3
ARCH 243	Media in Architecture	3
ARCH 253	Architectural Design I	4
ARCH 266	Materials and Methods	3
ARCH 463	Environmental Control Systems I	3
ARCH 463L	Environmental Control System I Lab	1
ARCH 464	Environmental Control Systems II	3
ARCH 464L	Environmental Control System II Lab	1

ARCH 475	Professional Practice	3
ART 100	World Art and Culture	3
ART 110	Integrated Art and Design Communication	2
ART 112	Drawing as Integrated Design Thinking	2
ART 121	Integrated Design Process	2
COMM 101	Fundamentals of Oral Communication	2
IAD 151	Intro to Interior Design	3
IAD 152	Interior Design I	3
IAD 231	Design Communication	2
IAD 254	Architectural Design II	4
IAD 281	History of Interiors I	3
IAD 282	History of Interiors II	3
IAD 332	Furniture Design and Construction	4
IAD 344	Digital Design Tools for Interior Design	2
IAD 351	Interior Design III	6
IAD 352	Interior Design IV	6
IAD 368	Materials & Specifications	3
IAD 410	Capstone Proposal Development	2
IAD 443	Universal Design	3
IAD 451	Interior Design V	6
IAD 452	Interior Design VI	6
Total Hours		97

Courses to total 126 credits for this degree

Interior Design Minor

Code	Title	Hours
IAD 151	Intro to Interior Design	3
IAD 281	History of Interiors I	3
IAD 282	History of Interiors II	3
IAD 368	Materials & Specifications	3
IAD 443	Universal Design	3
Directed Electives (as approved by IAD advisor)		3
Total Hours		18

Courses to total 18 credits for this minor

Landscape Architecture (B.S.L.A.)

Students are typically accepted into the landscape architecture B.S.L.A. major as freshman or as transfer students. All new students whether freshman or transfer will be required to submit a portfolio of creative work at the end of their first year in the program. (Students are encouraged to include work from landscape architecture courses and any art or architecture courses they may have taken.) A committee of faculty will review this portfolio along with each student's cumulative GPA to determine their eligibility to continue in the program. Portfolios are due no later than the Monday of No Examination Week. All students will be notified of their eligibility for the coming fall semester no later than three weeks after the last day of classes of spring semester.

All majors in the program must maintain at least a 2.5 cumulative GPA in landscape architecture major courses. Failure to do so will require the student to meet with their advisor and repeat the landscape architecture major courses that impact this overall GPA before advancing in the program.

On registering for a course offered by the program, the student agrees that the college may retain work completed by the student for display, instruction, and accreditation purposes.

Computer Equipment: Beginning with the first year of the program, all landscape architecture students are required to have their own laptop computer and appropriate software for use in their courses.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ARCH 483	Urban Theory and Issues	3
ART 110	Integrated Art and Design Communication	2
ART 112	Drawing as Integrated Design Thinking	2
ART 121	Integrated Design Process	2
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
GEOL 101	Physical Geology	3
GEOL 101L	Physical Geology Lab	1
LARC 151	Introduction to the Built Environment	3
LARC 154	Landscape Architecture Representation and Media 1	3
LARC 210	Landscape Architecture Representation and Media 2	3
LARC 251	Introduction to Principles of Site Design	3
LARC 254	Origins of Landscape Form	2
LARC 288	Plant Materials & Design 1	3
LARC 289	Plant Materials & Design 2	3
LARC 310	Landscape Architecture Representation and Media 3	3
LARC 340	Grading, Drainage, and Stormwater Management	4
LARC 341	Construction Materials, Detailing, and Documentation	4
LARC 353	Landscape Architecture Studio 1	3
LARC 355	Landscape Architecture Studio 2	3
LARC 358	Professional Office Practice in Landscape Architecture	2
LARC 363	Landscape Architecture Studio 3	3
LARC 365	Landscape Architecture Studio 4	3
LARC 380	Water Conservation Technologies	3
LARC 389	History of Landscape Architecture	3
LARC 395	GIS Applications in Land Planning 1	3
LARC 453	Landscape Architecture Studio 5	3
LARC 455	Landscape Architecture Studio 6	3
LARC 463	Landscape Architecture Studio 7	3
LARC 465	Landscape Architecture Studio 8	3
LARC 480	The Resilient Landscape	3
MATH 143	College Algebra	3
SOIL 205	The Soil Ecosystem	3
Select one of the following:		3-4
BIOL 314	Ecology and Population Biology	
FOR 221	Principles of Ecology	

REM 221	Principles of Ecology	
Total Hours		95-96

Courses to total 127 credits for this degree

Recommended Electives

Code	Title	Hours
ART 380	Digital Imaging	3
NRS 311	Public Involvement in Natural Resource Management	3
FISH 430	Riparian Ecology and Management	3
FOR 235	Society and Natural Resources	3
GEOL 335	Geomorphology	3
LARC 364	Summer Study Abroad Design Studio	6
LARC 382	Landscape, Language and Culture	2
LARC 390	Italian Hill Towns and Urban Centers	3
LARC 495	GIS Applications in Land Planning 2	3
PHIL 452	Environmental Philosophy	3
VTD 245	Advanced Modeling	3
VTD 266	Animation	3
VTD 271	Cross-Reality Technology 1	3

Landscape Architecture (M.L.A.)

Master of Landscape Architecture. Major in Landscape Architecture.

Candidates must fulfill the requirements of the College of Graduate Studies and of the Landscape Architecture program including a 3.0 minimum GPA in order to be considered for admission to the Master of Landscape Architecture first professional degree program. See the College of Graduate Studies (p. 232) section for the general requirements applicable to the degree.

Eighteen of the 36 credits required for the MLA degree must be at the 500 level, including the following courses: LARC 554, LARC 556, LARC 558. The remaining courses required to complete credits for this degree may be 300, 400 or 500-level electives from programs across the university. (300 level electives from Landscape Architecture cannot be used as graduate electives.) (More required courses are listed below under both thesis and nonthesis options)

Students without an undergraduate degree in Landscape Architecture are required to pursue the Non-Thesis or Final Project Option:

Non-Thesis Option Requirements

Requirements include:

Code	Title	Hours
LARC 554	Landscape Architecture Graduate Studio 1	6
LARC 556	Landscape Architecture Graduate Studio 2	6
LARC 558	Landscape Architecture Graduate Studio 3	6
Research Methods		
LARC 562	Landscape Architecture Graduate Studio 4	6
Non-Thesis Elective		
LARC 495	GIS Applications in Land Planning 2	3
Total Hours		27

The Graduate Thesis Option

Students with an undergraduate degree in Landscape Architecture may pursue the Graduate Thesis Option.

Requirements include:

Code	Title	Hours
LARC 500	Master's Research and Thesis	1-16
LARC 554	Landscape Architecture Graduate Studio 1	6
LARC 556	Landscape Architecture Graduate Studio 2	6
Research Methods		
Select 3 credits in various research methods		3
Graduate Thesis Elective courses		
LARC 495	GIS Applications in Land Planning 2	3
LARC 562	Landscape Architecture Graduate Studio 4	6
Total Hours		25-40

Landscape Architecture Minor

Code	Title	Hours
LARC 151	Introduction to the Built Environment	3
LARC 288	Plant Materials & Design 1	3
LARC 389	History of Landscape Architecture	3
LARC 480	The Resilient Landscape	3
Select courses from the following:		6
LARC 154	Landscape Architecture Representation and Media 1	
LARC 210	Landscape Architecture Representation and Media 2	
LARC 254	Origins of Landscape Form	
LARC 288	Plant Materials & Design 1	
LARC 289	Plant Materials & Design 2	
LARC 353	Landscape Architecture Studio 1	
LARC 355	Landscape Architecture Studio 2	
LARC 363	Landscape Architecture Studio 3	
LARC 365	Landscape Architecture Studio 4	
LARC 364	Summer Study Abroad Design Studio	
LARC 382	Landscape, Language and Culture	
LARC 390	Italian Hill Towns and Urban Centers	
LARC 395	GIS Applications in Land Planning 1	
LARC 495	GIS Applications in Land Planning 2	
LARC 499	Directed Study	
Total Hours		18

Courses to total 18 credits for this minor

Studio Art and Design (B.F.A.)

The B.F.A. is a four-year degree divided into two parts: the preprofessional program (freshman and sophomore years) and the professional program (junior and senior years). Majors are eligible to apply for the professional program when they have completed the art core, in the process of completing the 200-level art course requirements, and have earned a

minimum 2.75 GPA. Applications for the professional BFA program will be requested each semester; students must be admitted to the professional BFA through the review process *before being admitted to ART 490 and ART 495.* Transcripts and a portfolio of the student's art work must accompany the application. Students accepted into the professional program must complete 15 credits of 300-level studio courses with at least 6 of the 15 credits in one sequential studio area and 12 credits of art history before enrolling in ART 490 and ART 495. Students must maintain a minimum GPA of 2.75 and receive a grade of C or better in the 300- and 400-level art courses. Students may reapply for entry into the professional program any semester after their sophomore year.

Computer Equipment: Beginning with the first year of the program, all art and design students are required to have their own laptop computer and appropriate software for use in their courses. Please refer to the College of Art and Architecture's (http://www.uidaho.edu/caa) website for specifics.

Required course work includes the university requirements (see regulation J-3 (p.)), the art core, and a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in one of the following areas: graphic design, interaction design, painting, sculpture, printmaking, or photography/digital imaging and:

Code	Title	Hours
Art Core (p. 147)		14
Major Requirements		60
Total Hours		74

Major Requirements

Code	Title	Hours
ART 303	Contemporary Art and Theory	3
ART 407	New Media	3
ART 410	Professional Practices	2
ART 490	BFA Art/Design Studio (12 credits required)	12
ART 495	Critical Art Writing Seminar	3
Select 6 credits of Art History Electives with advisor approval:		6
ART 205	Visual Culture	
ART 213	History and Theory of Modern Design	
ART 217	Ancient & Pre-Modern Art	
ART 302	Modern Art and Theory	
ART 313	History and Theory of Modern Design	
ART 323	History of Typography	
ART 382	History of Photography	
ART 409	Visual Studies	
Select 15 credits from the following 200-level Studio courses:		15
ART 211	Life Drawing	
ART 216	Digital Tools	
ART 221	Introduction to Graphic Design	
ART 222	Introduction to Typography	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Interaction Design I	
ART 272	Experiential Design I	
ART 280	Understanding Photography	
Select 15 credits from 300-400 level Studio courses: [2]		15
ART 321	Graphic Design: Concepts	
ART 322	Graphic Design: Studio	
ART 330	Intermediate/Advanced Painting	
ART 340	Intermediate/Advanced Sculpture	
ART 350	Intermediate/Advanced Printmaking	
ART 360	Intermediate/Advanced Ceramics	
ART 370	Intermediate/Advanced Interaction + Experiential Design	
ART 380	Digital Imaging	
ART 390	Mixed Media	
ART 491	Information Design	
Total Hours		59

Courses to total 120 credits for this degree

1 At least 6 credits must be taken in one studio area, i.e., ART 330; no more than 6 credits in one studio area may be counted toward this requirement.

No more than a combined total of 9 credits of the following courses may be applied toward a B.F.A. degree: ART 404, ART 488, ART 497, ART 498, and ART 499.

Virtual Technology and Design (B.S.)

This is a four-year curriculum leading to a B.S. in Virtual Technology and Design. After the first year of study, academic achievement is reviewed to determine eligibility for continued study in VTD. Only students with a 2.5 or higher grade-point average are eligible to continue in the studio sequence. Another review is conducted at the end of the second year of study. Applicants to the second and third year are required to submit an electronic media based portfolio containing examples of their art and design work. Applicants should contact the program coordinator regarding acceptable media formats. The submission should also contain a transcript of any college work outside the UI. The deadline for third year applications is the close of the spring semester. Results of the evaluation will be made known to applicants by the end of June. Students accepted into the third and fourth years of the curriculum are required to maintain a minimum GPA of 3.0 and to receive a grade of 'C' or higher in all required VTD courses.

Note: Students who have not been accepted into the second year of the curriculum may not enroll in VTD 200 level design courses. Students who have not been accepted into the third year of the curriculum may not enroll in VTD 300 level design courses. Students who have left the program or fail a design studio course may only re-enter the curriculum by application to the program admissions committee.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ART 110	Integrated Art and Design Communication	2
ART 112	Drawing as Integrated Design Thinking	2
ART 121	Integrated Design Process	2
CS 112	Computational Thinking and Problem Solving	3
PHYS 111	General Physics I	3

PHYS 111L	General Physics I Lab	1
VTD 151	Virtual World Building 1	2
VTD 152	Virtual World Building 2	2
VTD 153	Virtual World Building 3	2
VTD 154	Virtual World Building 4	2
VTD 245	Advanced Modeling	3
VTD 246	Advanced Lighting and Materials	3
VTD 253	Virtual Design I	3
VTD 254	Virtual Design II	3
VTD 271	Cross-Reality Technology 1	3
VTD 355	Virtual Design III	4
VTD 356	Virtual Design IV	4
VTD 367	Visual Effects	3
VTD 372	Cross-Reality Technology 2	3
VTD 400	Seminar	3
VTD 457	Capstone Design Studio I	6
VTD 458	Capstone Design Studio II	6
History or Theory Courses		
Advisor-Approved History or Theory courses. [1]		12
Directed Electives		
Select three Directed Elective Courses [2]		8-9
Total Hours		85-86

Courses to total 120 credits for this degree

1 Courses must be associated with the disciplines of architecture, art, film, media, music or theatre, with approval of the VTD program. Students must select at least one (3 cr) 400-level course.

2 Elective Courses that allow a student to develop an emphasis area or breadth in a supporting discipline, with approval of VTD program.

Virtual Technologies Undergraduate Academic Certificate

Code	Title	Hours
VTD 151	Virtual World Building 1	2
VTD 151L	Lab: Virtual World Building 1	1
VTD 152	Virtual World Building 2	2
VTD 152L	Lab: Virtual World Building 2	1
VTD 153	Virtual World Building 3	2
VTD 153L	Lab: Virtual World Building 3	1
VTD 154	Virtual World Building 4	2
VTD 154L	Lab: Virtual World Building 4	1
Total Hours		12

Courses to total 12 credits for this certificate.

Program in Bioregional Planning and Community Design

Jacobus (Jaap) Vos, Program Head (Urban Design Center; phone 208-334-2999; bioregionalplanning@uidaho.edu; www.uidaho.edu/caa/programs/biop**).**

The interdisciplinary program in Bioregional Planning and Community Design is administered by the College of Art and Architecture (p. 143).

The Master of Science in Bioregional Planning and Community Design (BIOP) is an interdisciplinary, professional degree designed to prepare future leaders for roles in planning within both the public and private sectors and from local to international organizations. The BIOP program is distinguished from other planning programs around North America in three ways:

1. it represents a university-wide, interdisciplinary approach to planning involving eight UI colleges and nine academic departments;
2. it fully integrates education and research with community outreach; and
3. it supports, promotes and advances bioregional approach to planning that focuses on sustainable development, sustainable efficient conservation planning and management, and sustainable human quality-of-life within and across bioregions.

Students have a unique opportunity to integrate sustainable approaches to planning in a rapidly developing region of the Intermountain West.

The curriculum includes a common core of required courses that link knowledge with practice, and fundamental theories with skills. Restricted elective requirements build on this core knowledge and skill while providing flexibility for the students to focus on their interest areas. Students also select one of several areas of specialization:

1. Regional Planning and Multi-jurisdictional Governance,
2. Community Design,
3. Community and Economic Development,
4. Transportation and Sustainable Infrastructure,
5. GIS and Spatial Analysis,
6. Natural Hazards and Climate Change Mitigation and Adaptation or,
7. Student designed option.

These specializations provide connections between the BIOP program and the disciplines within the participating colleges and departments.

A 15-credit professional certificate is also available in the BIOP program. The certificate is designed for graduate students enrolled in various professional disciplines (e.g., transportation engineering, environmental and natural resource management, architecture, landscape architecture, public administration) who want some expertise in planning. Students earning the certificate will gain knowledge, skills, and values in bioregional planning and be able to effectively employ planning concepts and principles within their discipline.

Questions regarding the BIOP M.S. programs should be directed to bioregionalplanning@uidaho.edu.

Admission

Admission to the graduate program is based on: ability to complete graduate-level work evidenced by undergraduate transcripts; the applicant's statement of research and career objectives; the compatibility of the student's objectives with program mission; and availability of graduate faculty to act as major advisor for the applicant. The GRE, applicant's statement of objectives, and three letters of recommendation and resume are required.

Bioregional Planning and Community Design Graduate Program

- Bioregional Planning and Community Design Graduate Academic Certificate (p. 155)
- Urban Design Graduate Academic Certificate (p. 155)
- Bioregional Planning and Community Design (M.S.) (p. 155)

Bioregional Planning and Community Design (M.S.)

Master of Science. Major in Bioregional Planning and Community Design.

The Bioregional Planning and Community Design M.S. degree requires the completion of 44 units of course work. Specific requirements are: core requirement (20 cr); additional competency via restricted and free elective requirements (12 cr); area of specialization (9 cr); and final project or thesis. The final project can take the form of a professional report or a client report. See the BIOP student handbook for actual specific course requirements.

Bioregional Planning and Community Design Graduate Academic Certificate

The Bioregional Planning and Community Design Program offers a 16 credit Graduate Certificate in Bioregional Planning and Community Design that can be completed by students in other graduate programs who have an interest in planning as well as by professionals who are interested in planning issues but do not want to pursue the 44 credit M.S. degree.

Students earning the certificate will gain the basic knowledge, skills, and values in bioregional planning and be able to effectively employ planning concepts and principles within their discipline or within their community.

Code	Title	Hours
BIOP 520	Introduction to Bioregional Planning	3
BIOP 521	Local and Regional Comprehensive Planning	3
BIOP 522	Bioregional Planning Methods	3
BIOP 523	Planning Sustainable Places	3
BIOP 560	Bioregional Planning Studio I	4
Total Hours		16

Courses to total 16 credits for this certificate

Urban Design Graduate Academic Certificate

Code	Title	Hours
BIOP 520	Introduction to Bioregional Planning	3
BIOP 522	Bioregional Planning Methods	3
Choose One of the Following Tracks		12
Architecture and Landscape Architecture Students		
ARCH 554	Architectural Design: Vertical Studio (Max 12 credits)	
LARC 554	Landscape Architecture Graduate Studio 1	
Bioregional Planning and Community Design Students		
ARCH 558	Urban Design and Planning Studio	
ARCH 585	Urban Design Seminar	
LARC 520	Regional and Community Design	
LARC 548	Community Design Studio for Non-majors	
Total Hours		18

Courses to total 18 credits for this certificate

COLLEGE OF BUSINESS AND ECONOMICS

Marc C. Chopin, Dean (301A J. A. Albertson Bldg.; 208-885-6071); Darryl Woolley, Associate Dean.

College of Business and Economics faculty blend academic and practical experience, conduct cutting-edge research, serve as journal editors, and publish studies that shape local and regional policies. They serve local communities and are active in their fields. Most classes have a low student-to-teacher ratio and are taught by regular faculty.

he college was established as a professional division of the university in 1925. Long known as the College of Business Administration, it became the College of Business and Economics (CBE) in 1969. Its vision is to be a leader in integrated business education and provide a sound background in basic business principles that prepare graduates for positions of responsibility in firms and organizations including entrepreneurial ventures. As part of a state-supported land grant university, the CBE also aims to give its students an appreciation of the social importance and responsibilities of businessmen and businesswomen, and both the values and the knowledge to discharge those responsibilities.

The college's mission is to provide a collaborative learning environment that prepares students to be responsible leaders, managers, entrepreneurs and professionals. Students are prepared to succeed personally and professionally and to practice exemplary principles of citizenship. We accomplish this mission by:

- Delivering a high quality and team-based undergraduate curriculum that integrates accounting, economics, and business disciplines.
- Delivering and supporting focused graduate and outreach programs that build on our competencies within the college and meet the needs of our stakeholders.
- Providing experiential learning opportunities for our students.
- Engaging in research that makes meaningful contributions to management practice and business education.
- Sharing our business expertise in support of our state, our professions and the academic community.

The college has adopted a set of learning goals that mirrors this mission. These goals are:

1. Business Knowledge and Environment - CBE students will acquire an integrated understanding of business, accounting, and economic principles;
2. Critical Thinking and Ethical Problem-Solving - CBE students will be able to use appropriate tools of analysis to identify and address problems or opportunities;
3. Communication - CBE students will develop the ability to effectively obtain, organize, and communicate information;
4. Clarify purpose and perspective – CBE students will develop a better understanding of self and their place in the world;
5. Teamwork and Collaboration – CBE students will acquire the ability to interact effectively and professionally with people of varied backgrounds, abilities, and values.

International Business Programs

There are various programs by which a UI student can pursue international business. The following programs are available in connection with a business degree (B.S.Bus.): a major or minor in a foreign language; a major or minor in international studies; a major or minor in political science. For students seeking a business degree (B.S.Bus.), a minor is offered in international business (see Department of Business below). In addition, a student may have a dual major in business and foreign languages or major in foreign languages (B.A.) with a business option. A third option is the international studies program (B.A.), which may be selected by itself or as a dual major with business. Contact the Dean's Office in the College of Business and Economics for further information on international business programs.

Undeclared Status

A student may enter CBE as a freshman in an undeclared status. Because the first two years are nearly equivalent programs in all CBE majors, he or she may remain in the undeclared status until reaching junior level (completion of 58 credits). At that time, a major in the college should be selected. The undeclared status allows a student time to become acquainted with the majors within the college and to solidify career objectives before choosing a major.

General College Requirements for Graduation

University Requirements

See regulation J-3 (p. 91) for requirements that all students in the university must meet.

College Requirements

Before proceeding to upper-division work, students majoring in the College of Business and Economics (CBE) must have good academic standing.

Undergraduate students enrolled as majors in the College of Business and Economics may not take any course required for the major on a pass/fail basis, with the exception of those courses offered only on a P/F basis.

Courses completed at a two-year college for transfer into the CBE core or major must be validated before they will be accepted for upper-division course requirements. Validation procedures are established by the faculty members of the CBE department offering these courses. Validation techniques include a proficiency examination, CLEP testing, or successful completion of an additional advanced course in the given field.

Candidates for the B.S.Bus. degree must be accepted officially as majors in the College of Business and Economics for at least their last two semesters before graduation, excluding summer sessions, and complete at least the last 24 credit hours applicable toward their degree during this period.

At least 27 upper division College of Business and Economics credits applied to a B.S. Bus. Degree must be earned in residence on the University of Idaho campus. In addition, at least 12 upper division credit hours of the course requirement in the major must be earned on the UI campus.

All majors require the completion of at least 120 credit hours with the exception of the PGA Golf Management options under Economics,

Finance, Management and Human Resources, Management Information Systems, Marketing and Operations Management majors, which require completion of at least 128 credit hours. The required program of study includes:

1. 54-57 credit hours in the CBE Common Requirements, and
2. the major-specific required credit hours in the selected CBE major field. Additional undesignated electives are included in the 120 required credit hours (or 128 required credit hours in the case of the PGA Golf Management option).

A. CBE Common Requirements:

Code	Title	Hours
Communication		
COMM 101	Fundamentals of Oral Communication	2
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 313	Business Writing	
ENGL 317	Technical Writing	
PHIL 201	Critical Thinking	
Mathemetics and Statistics		
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
MATH 275	Calculus III	
Select one of the following:		3
STAT 251	Statistical Methods	
STAT 301	Probability and Statistics	
Economics		
Select one of the following options:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one Upper-Division Economics Elective		3
Humanities		
PHIL 208	Business Ethics	3
Accounting and Business Law		
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
BLAW 265	Legal Environment of Business	3
Integrated Business Core		
BUS 190	Integrated Business and Value Creation	3
BUS 252	Introduction to Business Analytics	3
MHR 310	Leading Organizations and People	3
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Process Management	3
BUS 490	Strategic Management	3
Total Hours		54-57

B. Requirements in Major (major-specific required credits)

Curricula and Degrees Offered

Undergraduate

The degree of Bachelor of Science in Business is offered with seven majors through two departments, as follows: Department of Accounting (accounting) and the Department of Business (business economics, finance, management information systems, management and human resources, marketing, and operations management).

Specific requirements for each major are described in the individual department section. The program of study includes three principal components: the general university requirements, the business and economics core, and the requirements for the selected CBE major field. Detailed statements of college requirements are under "General Requirements for Graduation."

Graduate

The CBE, through the College of Graduate Studies (p. 232), offers the degrees of Master of Accountancy (p. 158) (M.Acct.) in accounting and the Executive MBA (p. 163). The M.Acct. degree qualifies students to enter the public accounting profession in auditing, tax, or other positions ultimately requiring a Certified Public Accountant (CPA) license. The Executive MBA degree is designed to teach management concepts and an integrated view of business decision making to professionals who have been targeted in succession plans to take on greater managerial responsibility and leadership roles in an organization.

Graduate students must fulfill the requirements of the College of Graduate Studies (p. 232) and the department in which they study.

Accreditation

The University of Idaho College of Business and Economics and Department of Accounting are accredited members of AACSB International (AACSB). We are one of only 187 schools in the world accredited by AACSB for both our college and our accounting program.

Department of Accounting

Marla Kraut, Dept. Head (125A J. A. Albertson Bldg. 83844-3161; phone 208-885-7116). Contact information.

The goal of the accounting program is to prepare graduates to enter the accounting profession in public accounting, industry, or the public sector. The department offers two degrees: a Bachelor of Science in business, major in accounting; and a master of accountancy. The accounting program is fully accredited by AACSB International.

The department's mission is to provide an engaging learning environment that prepares our undergraduate accounting and Master of Accountancy students to be successful accounting professionals who exhibit high ethical standards. As a land grant university, we have a primary responsibility to serve the citizens of Idaho and the region through scholarly and outreach activities.

We accomplish this mission by:

- Delivering a high quality program of accounting studies that encompasses the relevant features of a dynamic accounting and business environment.
  - For undergraduate students, deliver general preparation in accounting to provide a foundation for future study or employment.

- For graduate students, build upon the foundation to prepare for an accounting career.
- Providing experiential learning opportunities for our students.
- Engaging in research that makes meaningful contributions to accounting practice and accounting education.
- Delivering and supporting outreach programs that build on our competencies within the college and meet the needs of our stakeholders.
- Sharing our accounting expertise in support of our state, our professions and the academic community.
- The department has adopted the CBE Learning Goals for the undergraduate accounting majors (See College of Business and Economics (p. 156) Part IV of this catalog). Undergraduate accounting majors will also acquire specific knowledge in financial reporting, cost and managerial accounting, taxation, and auditing.
- The Master of Accountancy (MACCT) Learning Goals mirror the College of Business and Economics learning goals. These goals are:

    1. Professional Accounting Knowledge - The MACCT students will acquire advanced accounting knowledge to prepare them for the accounting profession or further graduate work;
    2. a) Critical Thinking and Ethical Problem Solving. MACCT students will demonstrate critical thinking skills necessary for identifying and addressing complex situations in accounting-related areas including ethical dilemmas;
       b) Research Skills. MACCT students will be able to locate appropriate information, apply the rules or standards to a set of facts, and make an appropriate recommendation regarding a course of action;
    3. Communication – MACCT students will enhance their ability to effectively communicate through oral presentations and professional writing assignments;
    4. Clarify purpose and perspective – MACCT students will have opportunities for experiential learning, relationship development and appreciation of global perspectives;
    5. Teamwork and Collaboration –MACCT students will have opportunities to enhance their ability to interact in teams.

The M.Acct. degree program has primary emphasis areas that include auditing and financial accounting, corporate accounting management and controllership, government and not-for-profit fiscal management, international accounting, accounting information systems analysis and design, and taxation. Other emphasis areas or tracks are permitted, subject to approval by the departmental graduate committee.

Admission to the M.Acct. degree requires

1. a B.S., B.A., or B.B.A. degree from an accredited college or university,
2. an undergraduate grade-point average of at least 3.00, and
3. a minimum TOEFL score of 550 (if applicable).

The department, in conjunction with the College of Law, offers a concurrent J.D./M.Acct. degree. See the College of Graduate Studies (p. 232) and the College of Law (p. 241) sections for additional information on graduate/law concurrent degrees.

Majors

- Accounting (B.S.Bus.) (p. 159)

Minors

- Accounting Minor (p. 159)

Accounting Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Accounting. See the College of Graduate Studies (p. 232) section for the general requirements applicable to the M.S. degree. See Concurrent Degrees (p. 243) for information about the concurrent J.D./M.Acct degree.

- Accountancy (M.Acct.) (p. 158)

Accountancy (M.Acct.)

The Master of Accountancy degree requires 30 semester credits beyond the bachelor's degree, and is designed to meet the 150-credit requirement for taking the CPA examination in Idaho. Completion of this degree qualifies students to enter the public accounting profession in auditing, tax, or other positions ultimately requiring a CPA license.

Students seeking the M.Acct. degree will develop a degree plan in consultation with their advisors, complete at least 30 credits of course work, and successfully complete a comprehensive paper and portfolio.

If a student has earned a BS in Accounting (or equivalent), the required courses include:

Code	Title	Hours
ACCT 586	Contemporary Management Accounting Issues	3
ACCT 590	Advanced Auditing Seminar	3
ACCT 592	Financial Accounting and Reporting Seminar	3
Select two courses from the following:		6
ACCT 515	Advanced Financial Accounting & Reporting	
ACCT 521	Accounting Data Analytics	
ACCT 530	Accounting for Public Sector Entities	
ACCT 550	Fraud Examination	
ACCT 561	Comparative Accounting Theory	
ACCT 584	Federal Taxation of Entities	
ACCT 585	Estate and Elder Planning	
ACCT 598	Internship (Max 3 credits)	
ACCT 599	Non-thesis Master's Research (Max 6 credits)	
Additional 15 credits chosen from approved courses		15
Total Hours		30

Taxation Emphasis

General Master of Accountancy requirements apply. A total of 30 credits are required for this degree.

Code	Title	Hours
12 credits from the following or approved electives:		12
ACCT 584	Federal Taxation of Entities	
ACCT 585	Estate and Elder Planning	
ACCT 598	Internship	
BLAW 425	Law of Business Entities	
Additional 9 credits from approved courses		9
Total Hours		21

Audit and Fraud Examination Emphasis

General Master of Accountancy requirements apply. A total of 30 credits are required for this degree.

Code	Title	Hours
12 credits from the following or approved electives:		12
ACCT 521	Accounting Data Analytics	
ACCT 550	Fraud Examination	
ACCT 590	Advanced Auditing Seminar	
ACCT 598	Internship	
MIS 453	Database Design	
MIS 455	Data Management for Big Data	
Additional 9 credits from approved courses		9
Total Hours		21

In addition students must have taken at least one US tax class, and at least one Business Law class at the upper-division undergraduate level or at the graduate level. Those electing the thesis option include 6 credits of ACCT 500 in the additional 15 credits (must still complete comprehensive paper and portfolio).

If a student has not earned a BS in Business (or equivalent), in addition to the above mentioned courses, the student must take or have taken at least 24 credits of business, economics, statistics, and business law courses at the undergraduate level or at the graduate level. These courses must include at least two business disciplines (e.g. management, marketing, and finance).

Accounting (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) the general requirements for graduation from the College of Business and Economics (p. 156), and:

Code	Title	Hours
College of Business & Economics Requirements (p. 156)		54-57
Major Requirements		31-36
Total Hours		85-93

Major Requirements

Code	Title	Hours
ACCT 305	Accounting Information Systems	3
ACCT 315	Intermediate Financial Accounting I	3
ACCT 325	Intermediate Financial Accounting II	3
ACCT 385	Cost and Management Accounting	3
ACCT 421	Accounting Data Analytics	3
ACCT 483	Fundamentals of Federal Taxation	3
ACCT 492	Auditing and Controls	3
Select Accounting Electives from the following:		6
ACCT 415	Advanced Financial Accounting & Reporting	
ACCT 440	Fraud Examination	
ACCT 484	Federal Taxation of Entities	
ACCT 530	Accounting for Public Sector Entities	
ACCT 585	Estate and Elder Planning	
BLAW 420	Commercial Law	
BLAW 425	Law of Business Entities	
Select one additional course in Communication or Writing beyond the UI general Education requirements:		3
COMM 332	Communication and the Small Group	
COMM 335	Intercultural Communication	
COMM 347	Persuasion	
COMM 410	Conflict Management	
COMM 431	Applied Business and Professional Communication	
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
PHIL 201	Critical Thinking	
Select at least one credit from the following experiential learning courses: [1]		1-6
ACCT 403	Workshop [2]	
ACCT 498	Accounting Internship Program	
ACCT 595	Practicum in Tutoring	
BUS 429	Vandal Solutions	
ENTR 415	New Venture Creation	
FIN 460	Advanced Student Investment Fund Management	
FIN 467	Barker Capital Management Group	
FIN 468	Market Trading Lab	
MIS 456	Cybersecurity Competition	
OM 439	Systems and Simulation	
Total Hours		31-36

Courses to total 120 credits for this degree

1. This requirement may be waived by completion of relevant accounting experience or another University of Idaho course with approval of department head.
2. Specific ACCT 403 Workshops include Accounting Professional Development, Internal Control Review, Volunteer Income Taxation Assistance Program, and Study Abroad.

Accounting Minor

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
ACCT 315	Intermediate Financial Accounting I	3
Select 9 credits from the folllowing:		9
ACCT 305	Accounting Information Systems	
ACCT 325	Intermediate Financial Accounting II	
ACCT 385	Cost and Management Accounting	
ACCT 415	Advanced Financial Accounting & Reporting	
ACCT 440	Fraud Examination	
ACCT 482	Enterprise Accounting	
ACCT 483	Fundamentals of Federal Taxation	
ACCT 484	Federal Taxation of Entities	
ACCT 492	Auditing and Controls	
ACCT 530	Accounting for Public Sector Entities	
ACCT 585	Estate and Elder Planning	
BLAW 420	Commercial Law	

BLAW 425	Law of Business Entities	
Total Hours		18

Courses to total 18 credits for this minor

Department of Business

Scott K. Metlen, Dept. Head (225A J. A. Albertson Bldg. 83844-3161; phone 208-885-6295; metlen@uidaho.edu).

The six major fields (business economics, finance, management information systems, management and human resources, marketing, and operations management) within the department lead to the B.S. Bus. degree. These programs provide a solid foundation in the liberal arts, a broad professional preparation in business, and in-depth course work in a major field. They are designed to prepare the student to excel in a competitive market environment. The department offers minors in business, business analytics, marketing, and in international business. In addition, the department offers a certificate in entrepreneurship.

The business economics major prepares students for careers as economic forecasters, bankers, stockbrokers, labor or marketing analysts, lobbyists, or regional development specialists. The department offers three undergraduate economics degree programs, one in the College of Business and Economics (CBE) and two in the College of Letters, Arts, and Social Sciences (CLASS). The essential difference among these programs is that those in the College of Letters, Arts, and Social Sciences require fewer business courses and allow more electives. The less structured programs in this college are in the liberal arts tradition. A minor in economics is also offered through CLASS. Another minor in international policy economy is offered jointly through CLASS and CBE.

The PGA golf management option prepares students for a successful career in the golf industry. Accredited by the Professional Golfers Association (PGA), it is the only PGA accredited golf management program in the northwest and one of only 18 in the country. PGA Golf Management is an option for any business major.

The finance major prepares students for careers in commercial lending, security analysis, trading, portfolio management, and corporate finance. The management information systems major prepares students in the areas of systems analysis and development, data base management, networking, app-development, and data communications.

The management and human resources major prepares students for opportunities in the areas of management and personnel administration. The management emphasis has a macro focus oriented toward a more general managerial focus. The human resources management emphasis is directed toward those individuals preparing for careers in personnel administration, recruitment and selection, training, compensation and benefits, and labor relations. The Entrepreneurship and Small-Business Management Emphasis focuses on how to successfully operate a small business.

The marketing major prepares students for opportunities in a broad range of areas including management of retail and wholesale distribution, advertising, market research, services marketing and product management. Marketing has four emphases: General Marketing, Marketing Analytics, Entrepreneurship, and PGA Golf Management.

The operations management major prepares students for management positions in operations planning and control, process management, project management, quality management and purchasing.

The business minor is designed for students outside of the CBE who desire an exposure to the field of business. The minor covers the primary fields in business, provides a background in business as a basis for further graduate work, and complements the student's academic major and future professional career.

The international business minor, open only to students with a major in the College of Business and Economics, complements each of the majors in the college, and prepares students to extend their disciplinary mastery to the global economy.

The Business Analytics minor prepares students to explore the large datasets all organizations now have to help create effective business decisions.

Majors

- Business Economics (B.S.Bus.) (p. 161)
- Economics (B.A. or B.S.) (p. 162)
- Finance (B.S.Bus.) (p. 162)
- Management Information Systems (B.S.Bus.) (p. 165)
- Management and Human Resources (B.S.Bus.) (p. 164)
- Marketing (B.S.Bus.) (p. 166)
- Operations Management (B.S.Bus.) (p. 168)

Minors

- Business Minor (p. 161)
- Business Analytics Minor (p. 160)
- Economics Minor (p. 162)
- International Business Minor (p. 163)
- Marketing Minor (p. 168)
- Sales Management Minor (p. 168)

Certificates

- Entrepreneurship Undergraduate Academic Certificate (p. 162)
- Trading and Capital Management Undergraduate Academic Certificate (p. 169)

Business Graduate Program

- Executive MBA (p. 163)

Business Analytics Minor

Code	Title	Hours
MIS 455	Data Management for Big Data	3
MATH 330	Linear Algebra	3
OM 439	Systems and Simulation	4
STAT 431	Statistical Analysis	3
Electives		6
Select 6 credits from the following:		
ACCT 421	Accounting Data Analytics	
CS 336	Introduction to Information Assurance	
ECON 453	Econometrics	
FIN 463	Portfolio Management	
GEOG 385	GIS Primer	
MATH 438	Mathematical Modeling	

MIS 453	Database Design	
MKTG 421	Marketing Research & Analysis	
MKTG 431	Marketing Analytics	
OM 456	Quality Management	
STAT 404	Special Topics	
STAT 422	Sample Survey Methods	
STAT 426	SAS Programming	
Total Hours		19

Courses to total 19 credits for this minor

Business Economics (B.S.Bus.)

This program is offered through the College of Business and Economics (p. 156).

Students preparing for professional careers as economists in private business, government service, or careers where a broad knowledge of economics is useful should elect this curriculum.

Required course work includes the university requirements (see regulation J-3 (p. 91)), the college requirements, and:

Code	Title	Hours
College of Business & Economics Requirements (p. 156)		54-57
Major Requirements		24-60
Total Hours		78-117

Major Requirements

Code	Title	Hours
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
ECON 453	Econometrics	3
ECON 490	Economic Theory and Policy	3
Options		
Select one of the following options:		12-48
General (p. 161)		
Financial Economics (p. 161)		
PGA Golf Management (p. 161)		
Total Hours		24-60

A. General Option

Code	Title	Hours
Select 9 Upper-Division Credits in Economics		9
Select one Upper-Division Elective		3
Total Hours		12

Courses to total 120 credits for this degree

B. Financial Economics Option

Code	Title	Hours
FIN 302	Intermediate Financial Management	3
FIN 407	Financial Institutions	3
ECON 343	Money and Banking	3
Select at least one of the following:		3
FIN 381	International Finance	
FIN 408	Security Analysis	
FIN 463	Portfolio Management	
FIN 464	Derivatives and Risk Management	
Select one Upper-Division Economics Elective		3
Total Hours		15

Courses to total 120 credits for this degree

C. PGA Golf Management Option

Required course work includes all Business Economics, the Business Economics General Option requirements and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II [1]	3
PGA 298	Internship (Max 6 credits)	4
PGA 385	PGA Golf Management III	3
PGA 398	Internship (Max 6 credits)	6
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		27

[1] PGA 251 and PGA 385, together, can be used to meet the requirement for the Specialized Elective or the Marketing & Entrepreneurship Elective.

Courses to total 129 credits for this degree

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status.

Business Minor

This minor is not open to students pursuing other college business options (e.g., foreign language/business option, music/business option, or to students pursuing a major in the College of Business and Economics (p. 156).

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select three or more courses from the following:		9
FIN 301	Financial Resources Management	
MHR 311	Introduction to Management	
MKTG 321	Marketing	
MIS 350	Managing Information	
OM 378	Project Management	
ENTR 414	Entrepreneurship	
Business Electives		
Select one of the following options:		6

Two Upper-Division Business Discipline Electives [1]		
BUS 190	Integrated Business and Value Creation (AND One Upper-Division Business Discipline Elective) [1]	
Total Hours		21-22

Courses to total 21 credits for this minor

[1] Upper division course may be from any of the following prefixes: BUS (p. 435), ENTR (p. 506), FIN (p. 519), MHR (p. 596), MIS (p. 597), MKTG (p. 598), OM (p. 646).

Economics (B.A. or B.S.)

This program is offered through the College of Letters, Arts, and Social Sciences (p. 249).

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general College of LASS requirements for the B.A. or B.S. degree, and:

Code	Title	Hours
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
ECON 453	Econometrics	3
ECON 490	Economic Theory and Policy	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select Upper-Division Economics Electives		12
Select one of the following:		3-4
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
MATH 275	Calculus III	
Select one of the following:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Total Hours		34-37

Courses to total 120 credits for this degree

Economics Minor

This academic minor is offered through the College of Letters, Arts, and Social Sciences (p. 249).

Code	Title	Hours
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
Select one of the following:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Economic Electives		
Select 8-10 credits of Economics Electives		8-10
Total Hours		18-22

Courses to total 20 credits for this minor

Entrepreneurship Undergraduate Academic Certificate

Code	Title	Hours
ACCT 482	Enterprise Accounting	3
ENTR 414	Entrepreneurship	3
ENTR 415	New Venture Creation	3
Select one of the following Technical Electives:		3
AGEC 415	Entrepreneurial Skills in Agribusiness Management	
AGEC 478	Advanced Agribusiness Management	
ARCH 475	Professional Practice	
ART 410	Professional Practices	
ART 490	BFA Art/Design Studio	
BE 478	Engineering Design I	
BE 479	Engineering Design II	
MIS 353	Application Development	
MKTG 428	Marketing Management	
BUS 490	Strategic Management	
CHE 451	Environmental Management and Design	
CHE 452	Environmental Management and Design	
CS 481	CS Senior Capstone Design II	
ECE 480	EE Senior Design I	
ECE 481	EE Senior Design II	
ECE 482	Computer Engineering Senior Design I	
ECE 483	Computer Engineering Senior Design II	
FCS 496	Internship:Fashion Business	
FS 489	Food Product Development	
GEOG 340	Business Location Decisions	
GEOG 360	Population Dynamics and Distribution	
GEOG 385	GIS Primer	
ME 410	Principles of Lean Manufacturing	
ME 426	Mechanical Systems Design II	
Total Hours		12

Courses to total 12 credits for this certificate

Finance (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the college requirements, and the following:

Code	Title	Hours
College of Business & Economics Requirements (p. 156)		54-57
Major Requirements		28
Total Hours		82-85

Major Requirements

Code	Title	Hours
ACCT 315	Intermediate Financial Accounting I	3
FIN 302	Intermediate Financial Management	3
FIN 407	Financial Institutions	3
or FIN 483	Topics in Financial Analysis	

FIN 409	Problems Financial Mgmnt	3
or FIN 469	Risk and Insurance	
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
Finance Electives		
Select two of the following:		6
FIN 408	Security Analysis	
FIN 463	Portfolio Management	
FIN 464	Derivatives and Risk Management	
FIN 465	Introduction to Market Trading	
Supporting Electives		
Select two of the following:		6
ACCT 325	Intermediate Financial Accounting II	
ACCT 385	Cost and Management Accounting	
ACCT 415	Advanced Financial Accounting & Reporting	
ACCT 483	Fundamentals of Federal Taxation	
OM 378	Project Management	
FIN 381	International Finance	
ENTR 414	Entrepreneurship	
ENTR 415	New Venture Creation	
MKTG 421	Marketing Research & Analysis	
MKTG 427	Services Marketing	
OM 439	Systems and Simulation	
OM 456	Quality Management	
FIN 466	Market Trading Strategies	
MKTG/RMAT 495	Product Development and Brand Management	
ECON 343	Money and Banking	
ECON 351	Intermediate Macroeconomic Analysis	
ECON 352	Intermediate Microeconomic Analysis	
ECON 407	Public Finance	
ECON 453	Econometrics	
STAT 431	Statistical Analysis	
Two of the following may be used if not used to satisfy the above Finance elective:		
FIN 408	Security Analysis	
FIN 463	Portfolio Management	
FIN 464	Derivatives and Risk Management	
FIN 465	Introduction to Market Trading	
Total Hours		28

Courses to total 120 credits for this degree

A. PGA Golf Management Option

Required course work includes all Finance requirements and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship	1-3
PGA 385	PGA Golf Management III	3
PGA 398	Internship [1]	1-3
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		19-23

[1] PGA 385 or PGA 398 can be used to cover the two supporting electives (6 cr).

Courses to total 129 credits for this degree

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status

General Management (M.B.A.)

Master of Business Administration. Major in General Management.

The University of Idaho Executive MBA is ideal for experienced professionals who want to build their leadership and business skills without interrupting their careers.

Idaho Executive MBA at a Glance

Full-time, 22-months and AACSB accredited.

Program Focus

Integrative management with an emphasis on managing and leading organizations.

Cohort Model

Students enter as a group and learn together.

Faculty

University of Idaho professors and other experts.

Class Location

Coeur d'Alene once a month for two and a half days (Thursday, Friday, and a half day Saturday)

Program Start

Next cohort begins August 2020

Fees

Contact Executive Education (https://www.uidaho.edu/emba) in the College of Business for current fee information

International Business Minor

Note: This minor is limited to students majoring in the College of Business and Economics.

Code	Title	Hours
BUS 490	Strategic Management	3
ECON 446	International Economics	3
FIN 381	International Finance	3
MKTG 482	International Marketing	3
POLS 237	Introduction to International Politics	3

Select one of the following courses or another elective approved by the International Business Minor Advisor:		3
ECON 447	International Development Economics	
FLEN 307	Institutions of the European Union	
MHR 418	Managing Organization Design and Leading Changes	
POLS 440	International Organizations & International Law	
Total Hours		18

Foreign language mastery is required equivalent to completion of the introductory and intermediate courses, and an upper-division course in a language. A semester of study and/or internship in another country is recommended. CBE students currently have direct access to academic programs at Växjö University (Sweden), Ecole Supérieure de Commerce de Chambéry (France), Pontifica Universidad Católica del Ecuador, Griffith University (Australia), Fachhochschule fur Technik und Wirtschaft Berlin (Germany), University of Zaragoza (Spain), Haagse Hogeschool (The Netherlands), the Southern Denmark Business School, and the University of Newcastle upon Tyne (United Kingdom). CBE students also have access to programs in Australia, Chile, France, Italy, and Spain through the University Studies Abroad Consortium, and to numerous schools in various countries through the International Student Exchange Program. Internships are developed on an ad hoc basis.

Courses to total 18 credits for this minor

Management and Human Resources (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the college requirements, and:

Code	Title	Hours
College of Business Requirements (p. 156)		54-57
Major Requirements		21-47
Total Hours		75-104

Major Requirements

Code	Title	Hours
MHR 411	Acquiring Human Capital	3
MHR 417	Deploying and Developing Human Capital	3
Emphases		
Select one of the following emphases:		15-41
Management (p. 164)		
Human Resources Management (p. 165)		
PGA Golf Management (p. 165)		
Entrepreneurship and Small Business Management (p. 165)		
Total Hours		21-47

A. Management Emphasis

Code	Title	Hours
Management Elective		
Select one course from the following:		3
MHR 416	Managing Reward Systems	
MHR 418	Managing Organization Design and Leading Changes	
MHR 441	Maintaining Employee and Labor Relations	
Operations Management Elective		
Select one course from the following:		3
INDT 362	Behavior Based Safety	
OM 378	Project Management	
OM 439	Systems and Simulation	
OM 456	Quality Management	
OM 470	Supply Chain Management	
OM 472	Operations Planning and Scheduling	
PGA 386	Food and Beverage Hospitality with Lab	
PSYC 440	Psychology of Judgement and Decision Making	
Marketing and Entrepreneurship Elective		
Select one course from the following:		3-4
AGEC 333	Introduction to Sales	
ENTR 414	Entrepreneurship	
ENTR 415	New Venture Creation	
MKTG 324	Consumer Behavior	
MKTG 420	Integrated Marketing Communication	
MKTG 421	Marketing Research & Analysis	
MKTG 422	Sales Management	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Mgmnt	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
MKTG 482	International Marketing	
MKTG/RMAT 495	Product Development and Brand Management	
PGA 251	PGA Golf Management II	
PGA 385	PGA Golf Management III	
Accounting and Finance Elective		
Select one course from the following:		3
ACCT 305	Accounting Information Systems	
ACCT 315	Intermediate Financial Accounting I	
ACCT 385	Cost and Management Accounting	
ACCT 440	Fraud Examination	
ACCT 482	Enterprise Accounting	
ACCT 483	Fundamentals of Federal Taxation	
ECON 407	Public Finance	
FIN 302	Intermediate Financial Management	
FIN 381	International Finance	
Management Information Systems Elective		
Select one course from the following:		3
ACCT 305	Accounting Information Systems	
GEOG 385	GIS Primer	
MIS 353	Application Development	
MIS 355	Systems Analysis & Administration	
MIS 452	Business Telecommunications Management	
MIS 453	Database Design	
MIS 454	Issues in Information Systems	
MIS 455	Data Management for Big Data	
Total Hours		15-16

Courses to total 120 credits for this degree

B. Human Resources Management Emphasis

Code	Title	Hours
MHR 416	Managing Reward Systems	3
MHR 418	Managing Organization Design and Leading Changes	3
MHR 441	Maintaining Employee and Labor Relations	3
HR Decision-Making Elective		
Select one course from the following:		3-4
ACCT 385	Cost and Management Accounting	
ACCT 482	Enterprise Accounting	
ECON 453	Econometrics	
GEOG 385	GIS Primer	
MIS 353	Application Development	
MIS 355	Systems Analysis & Administration	
MIS 453	Database Design	
MIS 455	Data Management for Big Data	
MKTG 421	Marketing Research & Analysis	
OM 439	Systems and Simulation	
ORGS 444	Methods and Analysis in Organizational Science	
PSYC 218	Introduction to Research in the Behavioral Sciences	
PSYC 416	Industrial/Organizational Psychology	
PSYC 430	Tests and Measurements	
Specialized Electives		
Select one course from the following courses:		3-4
AOLL 560	Career Development in Organizations	
COMM 347	Persuasion	
COMM 410	Conflict Management	
COMM 355	Organizational Communication	
CTE 472	Teaching and Learning in Organizations	
ECON 441	Labor Economics	
EDCI 301	Lrng, Dvlpmnt, & Assessment	
INDT 362	Behavior Based Safety	
INTR 316	Explore Mentoring & Leadership	
JAMM 350	Public Relations Writing and Production	
MIS 454	Issues in Information Systems	
ORGS 305	Nonprofit Organizations	
PGA 251	PGA Golf Management II	
PGA 385	PGA Golf Management III	
POLS 451	Public Administration	
PSYC 390	Psychology of Learning	
PSYC 440	Psychology of Judgement and Decision Making	
PSYC 541	Human Relations in the Workplace	
SOC 201	Introduction to Inequalities & Inclusion	
Total Hours		15-17

Courses to total 120 credits for this degree

C. Entrepreneurship and Small-Business Management Emphasis

Code	Title	Hours
MHR 311	Introduction to Management	3
MHR 418	Managing Organization Design and Leading Changes	3
Complete the requirements for the following: [1]		12
Entrepreneurship Undergraduate Academic Certificate (p. 162)		
Specialized Electives (6 cr):		6
Work with your advisor to gain approval for a set of electives that will build your knowledge and skill in the industry or type of company that is the focus of your business interests.		
Total Hours		24

[1] In addition to fulfilling the College of Business and Economics core requirement, for this emphasis BUS 490 may be used to fulfill the Technical elective in the Entrepreneurship Undergraduate Academic Certificate (p. 162) requirements.

Courses to total 120 credits for this degree

D. PGA Golf Management Option

Required course work includes all Management and Human Resources requirements, one of the Management and Human Resources emphases, and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship	1-3
PGA 385	PGA Golf Management III	3
PGA 398	Internship	1-3
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		19-23

[1] PGA 251 and PGA 385, together, can be used to meet the requirement for the Specialized Elective or the Marketing & Entrepreneurship Elective.

Courses to total 129 credits for this degree

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status

Management Information Systems (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the college requirements, and:

Code	Title	Hours
College of Business & Economics Requirements (p. 156)		54-57
Major Requirements		24
Total Hours		78-81

Major Requirements

Code	Title	Hours
MIS 353	Application Development	3
MIS 355	Systems Analysis & Administration	3
MIS 452	Business Telecommunications Management	3
MIS 453	Database Design	3
MIS 454	Issues in Information Systems	3
MIS 455	Data Management for Big Data	3
Select at least two additional Restricted MIS Elective courses from the following OR one 400 level course offered by College of Business and Economics and one course from the following:		6
CS 120	Computer Science I	
CS 210	Programming Languages	
CS 240	Computer Operating Systems	
CS 270	System Software	
GEOG 385	GIS Primer	
GEOG 390	Cartographic Design & Geovisualization	
Total Hours		24

Courses to total 120 credits for this degree

A. PGA Golf Management Option

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II [1]	3
PGA 298	Internship (Max 6 credits)	1-3
PGA 385	PGA Golf Management III	3
PGA 398	Internship	1-3
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		19-23

[1] PGA 251 and PGA 385, together, can be used to meet the requirement for the Specialized Elective or the Marketing & Entrepreneurship Elective.

Courses to total 129 credits for this degree.

In addition to all other requirements, students must take at least 9 credits from outside the CBE in addition to those specifically required. These may be chosen from the restricted electives or from other courses.

Marketing (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 91)**), the college requirements, and:**

Code	Title	Hours
College of Business & Economics Requirements (p. 156)		54-57
Major Requirements		24-44
Total Hours		78-101

Major Requirements

Code	Title	Hours
MKTG 324	Consumer Behavior	3
MKTG 421	Marketing Research & Analysis	3
MKTG 428	Marketing Management	3
Emphases/Options		
Select one of the following emphases/options:		15-35
General Marketing Emphasis (p. 166)		
Sales Management Option (p. 166)		
Entrepreneurship Emphasis (p. 167)		
PGA Golf Management Option (p. 167)		
Marketing Analytics Option (p. 167)		
Total Hours		24-44

A. General Marketing Emphasis

Code	Title	Hours
Select one 300-400 level CBE course [1]		3
Tier 1 Marketing Electives		
MKTG 424	Pricing Strategy and Tactics [2]	3
or ECON 352	Intermediate Microeconomic Analysis	
MKTG 425	Retail Distribution Mgmnt	3
or MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	3
or MKTG 495	Product Development and Brand Management	
Select one of the following:		3
AGEC 333	Introduction to Sales	
MKTG 420	Integrated Marketing Communication	
MKTG 422	Sales Management	
Total Hours		15

Courses to total 120 credits for this degree

[1] 300-400 level CBE: A CBE, Statistics, or Mathematics course, excluding FIN 301, MHR 311, MKTG 321, MIS 350, OM 370.

[2] *ECON 352 Intermediate Microeconomic Analysis cannot be used to also satisfy the upper-division economics requirement.*

B. Sales Management Option

Code	Title	Hours
AGEC 333	Introduction to Sales	3
MKTG 422	Sales Management	3
Sales Practicum/Sales Internship/Vandal Solutions		
Select 3 credits from the following:		*3*
AGEC 433	Advanced Sales	
BUS 429	Vandal Solutions	
MKTG 398	Internship	

Sales Electives		
Select 6 credits from the following:		6
MHR 417	Deploying and Developing Human Capital	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Mgmnt	
MKTG 426	Marketing Channels Management	
OM 470	Supply Chain Management	
Total Hours		15

Courses to total 120 credits for this degree.

C. Entrepreneurship Emphasis

Code	Title	Hours
One 300-400 level CBE course [1]		3
ACCT 482	Enterprise Accounting	3
ENTR 414	Entrepreneurship	3
ENTR 415	New Venture Creation	3
Marketing Electives		
Select one course from the following:		3
MKTG 420	Integrated Marketing Communication	
MKTG 422	Sales Management	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Mgmnt	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
BUS 429	Vandal Solutions (Max 6 credits)	
MKTG 482	International Marketing	
MKTG/RMAT 495	Product Development and Brand Management	
Entrepreneurship Practicum/Internship/Vandal Solutions		
Select 3 credits from the following:		3
BUS 429	Vandal Solutions (Max 6 credits)	
MKTG 398	Internship	
Total Hours		18

[1] A CBE, Statistics, or Mathematics course, excluding FIN 301, MHR 311, MKTG 321, MIS 350, OM 370.

Courses to total 120 credits for this degree

D. PGA Golf Management Option

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship (Max 6 credits)	1-3
PGA 385	PGA Golf Management III	3
PGA 398	Internship (Max 6 credits)	1-3
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Tier 1 Marketing Electives		
MKTG 424	Pricing Strategy and Tactics [2]	3
or ECON 352	Intermediate Microeconomic Analysis	
MKTG 425	Retail Distribution Mgmnt	3
or MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	3
or MKTG 495	Product Development and Brand Management	
Select one course from the following:		3
AGEC 333	Introduction to Sales	
MKTG 420	Integrated Marketing Communication	
MKTG 422	Sales Management	
Total Hours		31-35

[1] ECON 352 cannot be used to also satisfy the upper-division economics requirement.

Courses to total 129 credits for this degree

Students must pass the PGA Player Ability Test
Students must have a 12.0 handicap or better to enter this program.
Students must also be a U.S. citizen to be eligible for PGA membership.

E. Marketing Analytics Option

Code	Title	Hours
MKTG 431	Marketing Analytics	3
STAT 422	Sample Survey Methods	3
STAT 431	Statistical Analysis	3
Select one of the following:		4
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
Select one of the following:		3
ANTH 416	Qualitative Social Science Methods	
MATH 330	Linear Algebra	
MIS 455	Data Management for Big Data	
PSYC 430	Tests and Measurements	
STAT 507	Experimental Design	
STAT 514	Nonparametric Statistics	
STAT 516	Applied Regression Modeling	
Tier 1 Marketing Electives		
Select one course from the following:		3
AGEC 333	Introduction to Sales	
ECON 352	Intermediate Microeconomic Analysis	
MKTG 420	Integrated Marketing Communication	
MKTG 422	Sales Management	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Mgmnt	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
MKTG/RMAT 495	Product Development and Brand Management	
Total Hours		19

Courses to total 120 credits for this degree

Marketing Minor

Code	Title	Hours
ECON 202	Principles of Microeconomics	3-4
or ECON 272	Foundations of Economic Analysis	
MKTG 321	Marketing	3
Select four courses from the following:		12
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 333	Introduction to Sales	
CTE 413	Retail Merchandising for Marketing Education	
ECON 453	Econometrics	
FCS 323	Apparel Product Development	
FCS 448	Consumer Economic Issues	
FS 489	Food Product Development	
JAMM 452	Public Relations Campaign Design	
JAMM 466	Media Campaign Strategy	
MKTG 324	Consumer Behavior	
MKTG 420	Integrated Marketing Communication	
MKTG 421	Marketing Research & Analysis	
MKTG 422	Sales Management	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Mgmnt	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
MKTG/RMAT 495	Product Development and Brand Management	
STAT 422	Sample Survey Methods	
Total Hours		18-19

Courses to total 18 credits for this minor

Operations Management (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the college requirements, and:

Code	Title	Hours
Colleges of Business & Economics Requirements (p. 156)		54-57
Major Requirements		28
Total Hours		82-85

Major Requirements

Code	Title	Hours
OM 378	Project Management	3
OM 439	Systems and Simulation	4
OM 456	Quality Management	3
OM 470	Supply Chain Management	3
OM 472	Operations Planning and Scheduling	3
Select at least three courses from the following:		9
ENVS 428	Pollution Prevention	
ME 410	Principles of Lean Manufacturing	
STAT 431	Statistical Analysis	
one 300-400 level CBE course [1]		
Select one Business, Culture, Economics or Language class [2]		3
Total Hours		28

1. 300-400 level CBE: Excluding MHR 311 and courses taken to complete the CBE Common Requirements.
2. Business, Culture, Economics, Language class must include a significant international experience component.

Courses to total 120 credits for this degree

A. PGA Golf Management Option

Required course work includes all Operations Management requirements and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship (Max 6 credits)	1-3
PGA 385	PGA Golf Management III	3
PGA 398	Internship (Max 6 credits) [1]	1-3
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		19-23

1. PGA 385 or PGA 398 can be used to cover the (nine credits) of OM electives.

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status.

Courses to total 129 credits for this degree

Sales Management Minor

Code	Title	Hours
AGEC 333	Introduction to Sales	3
MKTG 321	Marketing	3
MKTG 422	Sales Management	3
Economics Elective		*3-4*
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Sales Practicum Electives		3
AGEC 433	Advanced Sales	
BUS 429	Vandal Solutions	
MKTG 398	Internship	
Sales Elective		*3*
MHR 417	Deploying and Developing Human Capital	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Mgmnt	
MKTG 426	Marketing Channels Management	
OM 470	Supply Chain Management	
Total Hours		18-19

Courses to total 18 credits for this minor.

Note: This minor is not open to students pursuing the B.S. Business, Marketing - Sales Management Option.

Trading and Capital Management Undergraduate Academic Certificate

Code	Title	Hours
FIN 465	Introduction to Market Trading	3
FIN 466	Market Trading Strategies	3
One of the following:		3
AGEC 489	Understanding and Using Futures and Options Markets	
FIN 464	Derivatives and Risk Management	
At least 3 credits from the following:		3
AGEC 468	Risk Management: Commodity Merchandising	
AGEC 489L	Applied Commodity Market Analysis Lab	
FIN 468	Market Trading Lab	
FIN 467	Barker Capital Management Group	
Total Hours		12

Courses to total 12 credits for this certificate

COLLEGE OF EDUCATION, HEALTH AND HUMAN SCIENCES

Alison Carr-Chellman, Dean; Allen Kitchel, Associate Dean, (215 Commons Bldg.; 208-885-6772).

Organized as the College of Education in 1920 and renamed in 2017, the College of Education, Health and Human Sciences contains the departments of Curriculum and Instruction, Leadership and Counseling, and Movement Sciences. As represented in the College's name, several programs serving Idaho and beyond are offered at the undergraduate, master, specialist and doctoral levels in teaching and non-teaching fields of study.

Programs leading to degrees in teaching fields are offered in career and technical education, elementary education, physical education, secondary education, and special education. Programs leading to non-teaching degrees include athletic training; adult, organizational learning and leadership; dance; exercise science and health; physical education; recreation, sport, and tourism management; rehabilitation counseling and human services; and recreation. The College also offers certificate programs in Human Resource Development and Technical Workforce Training.

Additionally, the College is home to the TRIO Pre-College programs and the Center on Disabilities and Human Development (CDHD). The education of professional personnel for the public schools constitutes a critical service to the state, its people and to the education profession. The College screens for admission to programs leading to educational service to assure that applicants are qualified by preparation and personal attributes for this important work. Once admitted, the student completes a program in which competence in a broad general education, the professional functions of the teacher, and the subjects and/or skills to be taught are demonstrated and applied in P-12 schools. The College provides educational leadership for the people of Idaho, to the state's education system, and to the teaching profession through consultation, participation in organizational activities, and research. Preparation is provided in all of the major areas of professional education.

Admission Requirements

Admission to the University

For a statement of general undergraduate and graduate admission requirements, see admissions (p. 42) portion of this catalog.

Transfer Students

Students who have attended college, whether at another institution or in another division of the university, before matriculation in the College of Education, Health and Human Sciences must have a grade-point average of 2.00 (C) or better.

Teacher Education Programs

At the University of Idaho, the preparation of teachers is a cooperative enterprise between the College of Education, Health and Human Sciences and other colleges. Coordination is achieved through the Teacher Education Coordinating Committee. The screening of all applicants for admission to Teacher Education Programs is the responsibility of the College of Education, Health and Human Sciences and the dean of the College of Education is the recommending authority for certification.

Students preparing for a career in secondary teaching have the option of completing their bachelor's degrees in the College of Education, Health and Human Sciences (except for agricultural education, family life education, and music education) or in the department of their subject major.

Secondary education students have an advisor from the College of Education, Health and Human Sciences who is the primary advisor on teacher education requirements. Students should contact their content area for advising on content classes. When a student identifies teacher education as his or her objective (this could be as early as the freshman year and certainly no later than admission to Teacher Education Programs), the education advisor is designated.

Admission to, Continuation in, and Exit from Teacher Education Programs

Prospective teacher education candidates work closely with academic advisors to assure that they meet the criteria for each step in the admission and continuation process.

Admission to Teacher Education Programs

All students who plan to enter degree seeking or certification only teacher education programs must make application for admission to the program. Criteria for admission to teacher education programs include:

1. Initial interview with academic advisor;
2. cumulative grade point average of 2.75 or better;
3. have completed, with a minimum of a C in the following courses: ENGL 102, University of Idaho General Education Mathematics Course, COMM 101 and EDCI 201 (including 20 hours of service-learning or FCS 210 for ECDE students;
4. letter of application;
5. recommendations;
6. completion of background check; and
7. (when enrollment projections exceed departmental resources) a competitive interview.

Continuation in Teacher Education Program

Students seeking to continue in teacher education programs shall not have received more than two negative indicators ("red flags") on all education-coursework Standards and Dispositions evaluations.

Eligibility for Internship Experience

Prospective teachers seeking to enter the internship year must meet the following criteria:

1. cumulative grade-point average of 2.75 or higher;
2. completion of background check,
3. completion of and successfully passing program-area content assessment (e.g. Praxis II),
4. for Elementary Education and Early Childhood Development and Education students only, completion of at least parts I and II of the Idaho Comprehensive Literacy Assessment with passing scores; and
5. recommendation of advisor.

The College of Education, Health and Human Sciences does not permit students enrolled in any student teaching or internship course to concurrently function as head coach in any school sponsored sport

at any grade level, whether paid or voluntary. Students who desire to function as assistant coaches must have written approval of the department chair and the director of clinical experiences (adopted 1996).

Graduate Practicum and Internship in School Positions

Admission

Admission to practicum and internship courses is conditioned upon acceptance in a graduate program and approval of the student's major professor and/or committee.

The Program

Graduate students are provided clinical experience in the study of teaching and learning and in the performance of other school positions through graduate practica and internships (see courses 597 and 598 in the various subject fields in the college).

Teacher Certification

Students who complete a teacher education program at the University of Idaho are eligible to receive the Idaho Standard Instructional Certificate, the Exceptional Child Certificate, or the Career and Technical Certificate.

Students completing a master's degree, education specialist degree, or doctorate in educational administration may qualify for an administrator's certificate. The College of Education, Health and Human Sciences reserves recommendations for initial teacher certification to students who have completed the approved teacher preparation program and hold a bachelor's degree. To initiates the state certification process, contact the Certification Officer.

Certification-Only for Elementary, Secondary, and Special Education

Elementary Education Certification

Students who are seeking certification as an elementary teacher satisfy the requirements for the Idaho Standard Instructional Certificate, endorsed grades K-8, by meeting the general education requirements outlined by the state, completing the professional education core, and by completing the elementary major and internship year.

Secondary Education Certification

Students who are seeking certification while enrolled in an academic major or after completion of a degree normally satisfy the requirements for the Idaho Standard Instructional Certificate by including PSYC 101 orPSYC 305, and the professional education core as electives in their program for the baccalaureate degree, and by completing either:

1. one 45-credit teaching major; or
2. one 30-credit teaching major and one 20-credit teaching minor, as well as the internship experience.

Special Education Certification

Students who are seeking certification as a special education teacher satisfy the requirements for the Idaho Exceptional Child Certificate, endorsed grades K-12, by meeting the general education requirements outlined by the state, completing the professional education core, completing the special education major, and by meeting the requirements for the elementary or secondary education major, and the internship experience.

Certification Checklists

Checklists for the elementary, secondary, and special education certification programs are available through the Department of Curriculum and Instruction; and the Department of Movement Sciences. See the Academic Majors list in this section to locate the appropriate division.

Application for Certification

See procedures listed under Teacher Certification in this section.

Centers and Institutes

Centers and institutes affiliated with the College of Education, Health and Human Sciences support the mission of the College and extend services to the state, region, and nation. Programs offered through the College are enriched and extended as a result of these affiliations. The College of Education, Health and Human Sciencesn established the Center for Educational Research and Public Service (CERPS) to conduct research, to facilitate research by College of Education, Health and Human Sciences faculty members and graduate students, and to be of assistance to local school districts and other educational units. More recently, additional centers and institutes have been established. They are listed below; additional information about them can be accessed at the college website:

Center for Disabilities and Human Development
Center for Dance
Center for ETHICS
Institute for Mathematics, Instructional Technology, and Science Education
TRIO Programs

General College Requirements for Graduation

University Requirements

See regulation J (p. 91) for requirements that all students in the university must meet. When appropriate, courses listed in J-3 may satisfy both the University requirements and the College requirements.

College Requirements

All candidates for a baccalaureate degree in the College of Education, Health and Human Sciences must complete 120 semester credits, of which at least 36 must be in upper-division courses.

Degrees and Programs Offered

Undergraduate

Baccalaureate degrees offered in the College of Education, Health and Human Sciences are the Bachelor of Science in Education, Bachelor of Science in Dance, Bachelor of Science in Exercise, Sport, and Health Sciences, Bachelor of Science in Recreation, and Bachelor of Science in Technology. See the departmental section for the programs of studies leading to these degrees.

Graduate

The College of Graduate Studies offers work toward advanced degrees in several disciplines of the College of Education, Health and Human Sciences. Students must fulfill the requirements of the College of Graduate Studies and of the division in which they intend to study.

Consult the College of Graduate Studies (p. 232) section for further information.

Upon the completion of the appropriate programs of study, the following degrees are conferred: Master of Education, Master of Science, Doctor of Athletic Training, Education Specialist in Educational Leadership, Education Specialist, Doctor of Education, and Doctor of Philosophy.

Programs at the master's level are offered in adult/organizational learning and leadership; athletic training, career and technical education; curriculum and instruction; educational leadership; movement and leisure science; physical education; recreation; rehabilitation counseling and human services, curriculum and instruction, educational leadership, physical education, recreation, special education, and professional-technical and technology education.

Doctoral candidates majoring in education may concentrate in the following programs through the departments in the College: adult/organizational learning and leadership, career and technical education, counseling and human services, education, educational leadership, exercise science, healthy active lifestyles, higher education, curriculum and instruction, or special education. Students interested in pursuing a doctoral program must meet both the admission requirements from the College of Graduate Studies and the doctoral admission requirement from the College of Education, Health and Human Sciences. See the College of Graduate Studies (http://www.uidaho.edu/cogs) and College of Education, Health and Human Sciences (http://www.uidaho.edu/ed) web pages for specific requirements and timelines.

Major Curricula

Students in the College of Education, Health and Human Sciences must complete a major curriculum that leads to a degree granted by the College. These major curricula (with the degree goal identified) are listed in the individual department sections of this Catalog (see Departments of Curriculum and Instruction, Leadership and Counseling, and Movement Sciences).

Careful distinction should be made between a student's "academic major" and any additional "teaching majors" or "teaching minors" leading to certification.

Academic Majors Leading to Teacher Certification

Ag Education (B.S.Ag.Ed.) – Department of Agricultural and Extension Education (p. 110)

Elementary Education (B.S.Ed.) – Department of Curriculum and Instruction (p. 173)

Exercise, Sport, and Health Sciences (B.S.E.S.H.S) – Department of Movement Sciences (p. 193)

- Physical Education Teacher Certification Track

Music Education (B.Mus.) – Lionel Hampton School of Music (p. 273)

Career and Technical Education (B.S.Ed.) - Department of Curriculum and Instruction (p. 173)

- Business and Marketing Education Option
- Occupational Education Option
- Engineering & Technology Education Option

Secondary Education (B.S.Ed.) – Department of Curriculum and Instruction (p. 173) (see list below)

Teaching Majors and Minors

45-Credit Teaching Majors

Art
Biological Sciences
Chemistry
CTE: Business and Marketing
CTE: Engineering and Technology
English
Exceptional Child Generalist
French
German
History
Mathematics
Physical Education
Physical Sciences
Physics
Social Science
Social Science Through American Studies (45 or 60 cr)
Spanish

30-Credit Teaching Majors

English
English through American Studies
Exceptional Child Generalist
Geography
History
History Through American Studies
Mathematics
Political Science
Technology Education

20-Credit Teaching Minors

American Government & Political Science
Art
Basic Math
Biological Sciences
Business Education
Chemistry
Economics
English
English As a New Language
French
Geography
Geology
German
Health Education
History
Library Science
Mathematics
Music: Vocal
Online Teaching
Physical Education (Secondary)
Physics
Spanish

Accreditation and Program Approval

The College of Education, Health and Human Sciences is accredited by several national organizations including the National Council for the Accreditation of Teacher Education (NCATE/CAEP) for educator preparation, Commission on Accreditation of Athletic Training Education (CAATE) for Athletic Training, Council on Accreditation of Parks, Recreation, Tourism and Related Professions (COAPRT) for Recreation, the Council for Accreditation of Counseling and Related Educational Programs (CACREP) for Rehabilitation Counseling, and the Idaho Professional Standards Commission for our ability to offer endorsement recommendations for Idaho teachers. In addition, the College is also active in supporting the University's accreditation by the Northwest Commission on Colleges and Universities.

Department of Curriculum and Instruction

Raymond Dixon, Chair (405 B Educ. Bldg. 83844-3082; 208-885-6587, rdixon@uidaho.edu)

The Department of Curriculum and Instruction includes teacher preparation programs for elementary education, secondary education, special education and graduate programs in curriculum and instruction and special education.

The professional degree majors in curriculum and instruction provide knowledge, skills, and experiences to enable teachers to work effectively with K-12 students and schools. Students benefit from collaborative relationships and experience with partner schools and agencies.

Pre-service teaching degree majors are offered in elementary education, and secondary education (B.S.Ed.).A fifth-year program is offered in Special Education. Students should consult an advisor concerning requirements for degree and/or certification.

Master's degrees are offered in curriculum and instruction and special education (M.Ed.). The doctorate is available in education (Ed.D., Ph.D.) with specializations in curriculum and instruction or special education with emphases in autism and developmental disabilities.

Elementary and Secondary Teacher Education

These programs include the university core curriculum, professional education core curriculum and program content courses. Secondary students select teaching majors and minors from subjects currently taught in secondary schools such as English, social studies, sciences, mathematics, art, and foreign languages. Elementary students receive a B.S.Ed. degree; secondary students may earn a B.S.Ed. degree through the College of Education, Health and Human Sciences, Health and Human Sciences or a B.A. or B.S. degree through the department and college administering the academic major.

Early and continuous field experiences are a hallmark of the teacher preparation program, which culminates in a semester-long professional experience. Program goals include

1. recruitment and retention of high quality students through rigorous admission, continuation, and exit criteria,
2. preparation of teachers in a standards driven, integrated, and field-based program,
3. completion of the Internship semester, and
4. engagement in continuing professional development for students, teachers, and university faculty to improve K-12 student performance.

Special Education Teacher Education

The 5th Year Special Education Program offers a unique program culminating in an undergraduate degree and recommendation for certification in either elementary or secondary education plus a Master's Degree and recommendation for K-12 certification in special education. It is designed for students who want to become teachers in Special Education and general education.

Graduate Education/Curriculum and Instruction

The program provides advanced professional and foundational courses that support graduate study in the College of Education, Health and Human Sciences. Graduate programs in curriculum and instruction with an emphasis in teacher education include

1. Master of Education in curriculum and instruction; and
2. doctoral degree programs (either Doctor of Education or Doctor of Philosophy) with emphases in curriculum and instruction.

Graduate Education/Special Education

The program provides advanced professional and foundational courses that support graduate study in the College of Education, Health and Human Sciences. Graduate programs in special education include

1. Master of Education in special education; and
2. doctoral degree programs (either Doctor of Education or Doctor of Philosophy) with emphases in special education.

Persons interested in doctoral work in the College of Education, Health and Human Sciences should apply to the program through the College of Graduate Studies. Admission requirements for the doctoral program include:

1. a minimum grade-point average of 3.0 in undergraduate preparation,
2. a minimum grade-point average of 3.50 at the master's degree level or its equivalent,
3. the completion of the Graduate Record Examinations (GRE), and
4. letters of recommendation. Exceptions to the criteria may be made when documented by the Graduate Review Committee.

The professional degree majors in Career and Technical Education provide the opportunity and relevant skills, knowledge, and dispositions to enable teachers, administrators, and business and industry personnel to work effectively with today's organizations, youth, and adults. Learners benefit from the realistic relationships between course experiences and work required by educational institutions, business, industry, agriculture, and family life.

Preservice teaching degree majors are offered in: Career and Technical Education (CTE) with options in Business and Marketing Education, Engineering & Technology Education, and Occupational Education in the College of Education, Health and Human Sciences. (See Admission to Teacher Education Programs (p. 170).)

For all undergraduate teaching degrees listed below the student should consult an advisor concerning state requirements for the career-technical education certificate.

Business and Marketing Education

The business and marketing education option is for students interested in teaching business, marketing and business technology subjects at the high school or post-secondary level. Completers of this option qualify for an Idaho secondary teaching certificate (6-12) in business technology education, marketing technology education, and usually economics (based on selected electives).

Career-technical Education

Career-technical education option is designed primarily for teachers in area career-technical schools and secondary trade and industry programs who do not hold degrees. It does not qualify one for teaching in a public K-12 system unless a person also holds a secondary endorsement or an occupational specialist certificate.

Career-technical Certification

In collaboration with the Idaho State Division of career-technical Education, sequential inservice undergraduate career-technical education degree courses, as well as selected graduate career-technical courses, are offered each semester at area professional/technical schools located at Coeur d'Alene, Lewiston, Boise, and Twin Falls.

Technology Education

The Technology Education option is designed for students interested in teaching technical subjects related to construction technology, communications technology, electronics, engineering, manufacturing, production and other technology related subjects. It is a 2+2 program, meaning graduates from technical and community colleges with an associates degree in a technical/science area can be admitted and complete the program in two full years. Graduates of this option qualify for an Idaho secondary teaching certificate in technology education (grades 6-12).

Majors

- Early Childhood Development and Education (B.S.Erly.Chldhd.Dev.Ed.) Coursework will prepare students to be recommended for Idaho Early Childhood Education/Early Childhood Special Education (ECE/ECSE) Blended Teacher Certification. Students will be certified to teach children birth through grade three.

  For information on an undergraduate major in Early Childhood Development and Education, see the School of Family and Consumer Sciences (p. 120) section.
- Elementary Education (B.S.Ed.) (p. 177)
- Secondary Education (B.S.Ed.) (p. 178)
- Career and Technical Education (B.S.Ed.) (p. 174)

Certificates

- Culturally Responsive Padagogy and Universal Design for Learning Undergraduate Academic Certificate (p. 176)

Curriculum and Instruction Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Curriculum and Instruction. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Curriculum and Instruction (M.Ed.) (p. 177)
- Special Education (M.Ed.) (p. 178)
- Curriculum and Instruction (Ed.S.) (p. 176)
- Education (Ed.D.) (p. 177)
- Education (Ph.D.) (p. 177)
- Teacher Certification and Professional Development (p. 179)

Career and Technical Education (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following courses. A 2.75 GPA is required for graduation.

Code	Title	Hours
General Career and Technical Education Requirements		
CTE 351	Principles and Philosophy of Career and Technical Education	3
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1-3
CTE 464	Career Guidance and Transitioning to Work	3
Options		
Select one of the following options:		45-87
Business and Marketing Education (p. 174)		
Engineering and Technology Education (p. 175)		
Family and Consumer Sciences (p. 176)		
Workforce Training and Development (p. 175)		
Total Hours		54-98

A. Business and Marketing Education Option

The Business and Marketing Education option is for students interested in teaching business, marketing, and business technology subjects at the high school or post-secondary level. Completers of this option may apply for Idaho secondary teacher certification with endorsements in business technology, marketing technology, and usually economics (based on selected electives).

Requirements include the General Career and Technical Education Requirements, the satisfactory completion of the PRAXIS II Content Area Exam, and the following:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
BLAW 265	Legal Environment of Business	3
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	2

CTE 413	Retail Merchandising for Marketing Education	3
CTE 415	Productivity Software in Business Education	3
or CTE 419	Database Applications and Information Management	
CTE 416	Website Design and Development	3
or CTE 460	Desktop Publishing	
CTE 418	Teaching Economics and Personal Finance	3
CTE 484	Internship in Career and Technical Education Teaching	10
CTE 492	Business and Marketing Education Methods	3
CTE 495	Administrative Technology Management and Procedures	3
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 401	Internship Seminar	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
ENGL 313	Business Writing	3
FCS 448	Consumer Economic Issues	3
MATH 143	College Algebra [1]	3
or STAT 251	Statistical Methods	
MHR 310	Leading Organizations and People [1]	3
or MHR 311	Introduction to Management	
MKTG 321	Marketing	3
PSYC 101	Introduction to Psychology	3
or PSYC 305	Developmental Psychology	
Select 6 credits of Accounting, Business, Economics or CTE electives		6
Total Hours		87

[1] *This mathematics elective is in addition to the General Education Mathematics requirements. Students must complete a total of 6 credits.*

Courses to total 128 credits for this degree

Note: Students interesting in obtaining a teaching endorsement in Economics need to ensure that 3 credits of the designated elective credits are in economics, finance or accounting, see an advisor for details.

B. Workforce Training and Development Option

This option is designed for those teachers in secondary trade and industrial programs who wish to teach in post-secondary professional-technical programs. Requirements include the General Career and Technical Education Requirements and the following:

Code	Title	Hours
CTE 420	Assessment in Contextual Learning Environments	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 447	Diverse Populations and Individual Differences (Max 3 credits)	2-3
CTE 472	Teaching and Learning in Organizations	3
Select one approved course in computer literacy		3
Career and Technical electives approved by advisor to total 128		
CTE 200	Seminar	
CTE 203	Workshop	
CTE 204	Special Topics	
CTE 299	Directed Study	
CTE 400	Seminar	
CTE 403	Workshop	
CTE 404	Special Topics	
CTE 418	Teaching Economics and Personal Finance	
CTE 499	Directed Study	
Additional requirements for Secondary Teaching Certificate include the following: [1]		
COMM 101	Fundamentals of Oral Communication	2
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 401	Internship Seminar	1
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
EDCI 485	Secondary Internship	10-15
or CTE 484	Internship in Career and Technical Education Teaching	
PSYC 101	Introduction to Psychology	3
or PSYC 305	Developmental Psychology	
Total Hours		45-51

[1] *Additional requirements for CTE Occupational Education students seeking an Idaho Secondary Teaching Certificate include the satisfactory completion of the PRAXIS II Content Area Test, and* COMM 101.

Courses to total 128 credits for this degree

C. Engineering and Technology Education Option

Requirements include the General Career and Technical Education Requirements, the satisfactory completion of the PRAXIS II Content Area Exam, and the following:

Code	Title	Hours
ASM 107	Beginning Welding	2
ASM 202	Agricultural Shop Practices	2
COMM 101	Fundamentals of Oral Communication	2
CTE 130	Introduction to Electricity and Electronics	3
CTE 310	Lab Safety, Mgnt, & Liability	3
CTE 353	Manufacturing Systems	3
CTE 354	Construction Technology	3
CTE 370	Transportation & Engineering Technologies	3
CTE 410	Technology & Society	3
CTE 415	Productivity Software in Business Education	3
CTE 416	Website Design and Development	3
CTE 417	Teaching & Learning through STEM Integration	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 462	Communication Technology	3

CTE 481	Computer-Integrated and Robotics Manufacturing Technologies	3
CTE 484	Internship in Career and Technical Education Teaching	10
CTE 494	Senior Project	3
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
ENGL 317	Technical Writing	3
MATH 143	College Algebra	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
PSYC 101	Introduction to Psychology	3
or PSYC 305	Developmental Psychology	
Total Hours		87

Courses to total 129 credits for this degree

D. Family and Consumer Sciences Option

Code	Title	Hours
CTE 420	Assessment in Contextual Learning Environments	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 447	Diverse Populations and Individual Differences	3
or EDCI 302	Teaching Culturally Diverse Learners	
CTE 484	Internship in Career and Technical Education Teaching	10-14
or AGED 498	Internship	
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 401	Internship Seminar	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
FCS 105	Individual and Family Development	3
FCS 123	Textiles	3
or FCS 419	Dress and Culture	
FCS 205	Concepts in Human Nutrition	3
FCS 234	Infancy and Early Childhood	3
FCS 236	Directed Early Childhood Laboratory Experience	3
FCS 251	Survey of FCS Professions	1
FCS 270	Scientific Principles of Food Preparation	3
FCS 275	Experimental Foods	2
FCS 340	Parent-Child Relationships in Family and Community	3
or FCS 445	Issues in Work and Family Life	
FCS 346	Personal and Family Finance and Management	4
or FCS 448	Consumer Economic Issues	
FCS 428	Housing America's Families	3
Select one of the following:		3-4
AGED 452	Methods of Teaching Agriculture	
CTE 472	Teaching and Learning in Organizations	
FCS 461	Methods & Strategies in FCS Education	
Total Hours		68-73

Courses to total 120 credits for this degree

Culturally Responsive Pedagogy and Universal Design for Learning Undergraduate Certificate

Code	Title	Hours
Mandatory Online 1-credit courses		
EDCI 418	Culturally Responsive Pedagogy	1
EDCI 420	Gender and Sexual Diversity in Schools	1
EDCI 421	Racial and Ethnic Diversity in Schools	1
EDCI 422	Socio-Economic Diversity in Rural Schools	1
EDCI 424	Universal Design in Learning	1
EDCI 426	Working with Native American Students and Communities	1
Selected Emphasis Electives		
Select two courses from the following:		6
COMM 335	Intercultural Communication	
COMM 432	Gender and Communication	
EDSP 300	Educating for Exceptionalities	
EDCI 302	Teaching Culturally Diverse Learners	
SOC 201	Introduction to Inequalities & Inclusion	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
PSYC 315	Psychology of Women	
Total Hours		12

Courses to total 12 credits for this academic certificate.

Curriculum and Instruction (Ed.S.)

Education Specialist. Major in Curriculum and Instruction.

General Ed.S. requirements apply. A Career and Technical Education emphasis is available by completing the following requirements:

Code	Title	Hours
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations (Max 3 credits)	1-3
CTE 464	Career Guidance and Transitioning to Work	3
CTE 551	Principles and Philosophy of Career and Technical Education	3
Select one of the following:		3
AOLL 573	Adult Learners: Foundations and Characteristics	
AOLL 574	Adult and Transformational Learning	

AOLL 575	Strategies for Facilitating Adult Learning	
CTE electives to total 24 credits		10-12
Total Hours		22-26

Note: There are additional requirements for obtaining a CTE teaching credential at the secondary and post-secondary levels in the state of Idaho. See a CTE advisor for details.

Courses to total 24 credits

Curriculum and Instruction (M.Ed.)

Master of Education. Major in Curriculum and Instruction.

Students completing a master's degree in Curriculum & Instruction must satisfy a minimum of 30 credit hours. Programs of study are customized for each student, and usually include the following EDCI core courses[1] (15 credit hours), and must include the required variable credit Non-Thesis Master's Research project:

Code	Title	Hours
EDCI 511	Planning and Administering the Curriculum	3
EDCI 513	History of Educational Thought	3
EDCI 524	Models of Teaching	3
EDCI 570	Introduction to Research in Curriculum and Instruction	3
EDCI 572	Measurement and Evaluation	3
EDCI 599	Non-thesis Master's Research	2-5
Total Hours		17-20

Note: The core courses are offered at least once during the Fall or Spring semester. All core courses are offered in the summer.

Career and Technical Education Emphasis

General M.Ed. requirements apply. A Career and Technical Education emphasis is available by completing the following requirements:

Code	Title	Hours
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1-3
CTE 464	Career Guidance and Transitioning to Work	3
CTE 551	Principles and Philosophy of Career and Technical Education	3
Select one of the following:		3
AOLL 573	Adult Learners: Foundations and Characteristics	
AOLL 574	Adult and Transformational Learning	
AOLL 575	Strategies for Facilitating Adult Learning	
CTE 447	Diverse Populations and Individual Differences	
Total Hours		12-14

Note: There are additional requirements for obtaining a CTE teaching credential at the secondary and post-secondary levels in the state of Idaho. See a CTE advisor for details.

Teacher Certification Emphasis

An emphasis leading to secondary teacher certification is available following demonstration of mastery of a secondary school content area and the following:

Code	Title	Hours
EDSP 300	Educating for Exceptionalities	3
EDCI 401	Internship Seminar	1
EDCI 511	Planning and Administering the Curriculum	3
EDCI 513	History of Educational Thought	3
EDCI 524	Models of Teaching	3
EDCI 563	Literacy Methods for Content Learning	3
EDCI 570	Introduction to Research in Curriculum and Instruction	3
EDCI 572	Measurement and Evaluation	3
EDCI 598	Internship	1-16
Content-Specific Methods Course		3
Content-Specific Methods Practicum		1
Total Hours		27-42

Note: There are additional requirements for obtaining a CTE teaching credential at the secondary and post-secondary levels in the state of Idaho. See a CTE advisor for details.

Education (Ed.D.)

Doctor of Education. Major in Education.

The Ed.D. degrees in this field is offered through the College of Education, Health and Human Sciences (p. 170).

Education (Ph.D.)

Doctor of Philosophy. Major in Education.

The Ph.D. degrees in this field is offered through the College of Education, Health and Human Sciences (p. 170).

Elementary Education (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3 (p.)), successful completion of Praxis II test, the Idaho Comprehensive Literacy Assessment parts 1 and 2 prior to the internship, and completion of requirements for a subject area endorsement as outlined by the Idaho State Board of Education requirements for a Standard Secondary Certificate. Students must maintain minimum 2.75 GPAs and earn grades of C or above in the following courses:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 321	Literature for Children	3
EDSP 300	Educating for Exceptionalities	3
EDCI 466	Literacy Assessment and Intervention	3
HIST 101	World History I	3
or HIST 102	World History II	

HIST 111	United States History I	3
or HIST 112	United States History II	
MATH 143	College Algebra	3
MTHE 235	Mathematics for Elementary Teachers I	3
MTHE 236	Mathematics for Elementary Teachers II	3
PEP 350	Elementary Health and Physical Education	3
PSYC 305	Developmental Psychology	3
Select one Advanced Composition Elective course:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 291	Beginning Poetry Writing	
ENGL 292	Beginning Fiction Writing	
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 317	Technical Writing	
ENGL 401	Writing Workshop for Teachers	
Select one English Elective in Composition or Literature [1]		3
Select one Literature Elective		3
Select 6 credits of Social Science Electives other than Psychology		6
Elementary Education Major Requirements		
Mathematics/Science/Social Studies/Technology Block		
EDCI 327	Elementary Math Education	3
EDCI 328	Elementary Social Studies Educ	3
EDCI 329	Elementary Science Educatn	3
EDCI 408	Integrated Methods Practicum I	1
EDCI 410	Technology, Teaching and Learning	2
Literacy/Arts Education Block		
DAN 360	Teaching Creative Dance for Children	1
EDCI 320	Teaching Reading and Literacy	3
EDCI 322	Teaching Writing/Language Arts	3
EDCI 325	Elementary Art Education	3
EDCI 409	Integrated Methods Practicum II	1
Internship Semester		
EDCI 401	Internship Seminar	1
EDCI 483	Elementary Internship I	14
Total Hours		94

Courses to total 120 credits for this degree

[1] Excluding ENGL 101 Writing and Rhetoric I and ENGL 102 Writing and Rhetoric II.

Secondary Education (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3 (p.)), successful completion of Praxis II test in the student's content area, and one 45-credit teaching major or one 30-credit teaching major and one 20-credit teaching minor (see "Teaching Majors and Minors (p. 179)" below). Students must maintain minimum 2.75 GPAs and earn grades of C or above in the following courses:

Code	Title	Hours
Teachning Majors and Minors (p. 179)		45-50
Major Requirements		49
Total Hours		94-99

Major Requirements

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 401	Internship Seminar	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDCI 485	Secondary Internship	15
EDSP 300	Educating for Exceptionalities	3
PSYC 101	Introduction to Psychology	3
or PSYC 305	Developmental Psychology	
Select one Math or Statistics UI General Education course		3
Select one Advanced Composition course:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 291	Beginning Poetry Writing	
ENGL 292	Beginning Fiction Writing	
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 317	Technical Writing	
ENGL 401	Writing Workshop for Teachers	
Select one of the following Special methods sequence:		4
EDCI 437 & EDCI 447	Secondary Foreign Language Methods and Secondary Foreign Language Methods Practicum	
EDCI 431 & EDCI 441	Secondary English Methods and Secondary English Practicum	
EDCI 432 & EDCI 442	Secondary Social Studies Methods and Secondary Social Studies Methods Practicum	
EDCI 433 & EDCI 443	Secondary Science Methods and Secondary Science Methods Practicum	
EDCI 434 & EDCI 454	Secondary Mathematics Methods and Secondary Mathematics Methods Practicum	
EDCI 436 & EDCI 446	Secondary Art Methods and Secondary Art Methods Practicum	
Total Hours		48

Courses to total 128 credits for this degree

Special Education (M.Ed.)

Master of Education. Major in Special Education.

Special Education is a unique program culminating in an undergraduate B.S.Ed. degree and recommendation for certification in either elementary or secondary education plus an Master of Education (M.Ed.) Degree and recommendation for the Standard Exceptional Child Certificate with a

Generalist K-12 Endorsement. It is designed for students who want to become teachers in Special Education and general education.

Students must complete all requirements for a B.S.Ed in elementary or secondary education, and successfully complete with a "C" or better these prerequisites:

Code	Title	Hours
EDSP 300	Educating for Exceptionalities	3
EDSP 325	Supporting Student Behaviors in the Classroom	2
EDSP 350	Language and Communication Development and Disorders	3
MTHE 235	Mathematics for Elementary Teachers I	3
Total Hours		11

Students must be admitted to the Special Education Masters Program through the College of Graduate Studies.

Students must also pass all three tests on the Idaho Comprehensive Literacy Assessment (ICLA) and the Praxis II Assessment in Special Education (10542 and 20353) and Elementary Education (10014) prior to beginning their special education internship.

Students will qualify for a Master of Education with a major in Special Education and an institutional recommendation for special education certification which will qualify the graduate for the Exceptional Child Certificate and Generalist K-12 Endorsement when they successfully complete the following coursework:

Code	Title	Hours
EDCI 570	Introduction to Research in Curriculum and Instruction	3
EDSP 423	Collaboration	3
EDSP 425	Evaluation of Children and Youth	3
EDSP 426	Developing Instructional Programs	3
EDSP 522	Advanced Evaluation Techniques	2
EDSP 540	Behavioral Analysis for Children and Youth	3
EDSP 548	Special Education Curriculum	3
EDSP 549	Language, Communication, and Social/Emotional Enhancement	3
EDSP 597	Practicum	1-16
EDSP 599	Non-thesis Master's Research	1-16
Additional Reading Requirement		
EDCI 463	Literacy Methods for Content Learning (For students with B.S.Ed. Elementary Education)	
EDCI 320	Teaching Reading and Literacy (For students with B.S.Ed. Secondary Education)	
Total Hours		25-55

Teacher Certification and Professional Development

A person who holds a bachelor's degree and wishes to earn an early childhood development and education, elementary education, secondary education teaching certificate should talk to the chair of the Department of Curriculum and Instruction about entry into the certification and/or degree programs.

Teaching Majors and Minors

One option required from the following:

- One 45-credit teaching major
- One 30-credit teaching major and one 20-credit teaching minor

The various teaching majors and teaching minors required to accompany several of the curricula are outlined below. Because the College of Education reserves the right to approve or disapprove the content of all proposed majors and minors, students should confer closely with their college advisors and with advisors in the academic department concerned in the selection of these courses.

- Art (p. 179)
- Basic Mathematics (p. 180)
- Biological Sciences (p. 180)
- Business Education (p. 181)
- Chemistry (p. 181)
- Earth Science (p. 182)
- Economics (p. 182)
- Engineering and Technology Education (p. 182)
- English (p. 183)
- English as a New Language (p. 184)
- Exceptional Child Generalist Teaching Major (p. 184)
- French (p. 184)
- Geography (p. 185)
- German (p. 185)
- Health Education (p. 185)
- History (p. 186)
- Library Science (p. 186)
- Mathematics (p. 186)
- Music Education (p. 187)
- Natural Science (p. 187)
- Online Teaching (p. 188)
- Physical Education (p. 188)
- Physical Sciences (p. 188)
- Physics (p. 188)
- Political Science (p. 189)
- Social Science (p. 189)
- Sociology/Anthropology (p. 190)
- Spanish (p. 190)
- Technical Workforce Training Undergraduate Academic Certificate (p. 191)
- Theater (p. 191)

Art

An academic major in Art Education is also offered in the major curriculum leading to the degree of B.S.Art Ed. (see Art and Architecture (p. 143) in the departmental section of this catalog).

A. 52-Credit Art Teaching Major

Code	Title	Hours
ART 100	World Art and Culture	3
ART 110	Integrated Art and Design Communication	2

ART 111	Drawing I	3
ART 112	Drawing as Integrated Design Thinking	2
ART 121	Integrated Design Process	2
ART 122	Art & Design Process	3
Select 18 credits from the following:		18
ART 211	Life Drawing	
ART 221	Introduction to Graphic Design	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Interaction Design I	
ART 280	Understanding Photography	
Select two art studio courses from the following:		6
ART 321	Graphic Design: Concepts	
ART 330	Intermediate/Advanced Painting	
ART 340	Intermediate/Advanced Sculpture	
ART 350	Intermediate/Advanced Printmaking	
ART 370	Intermediate/Advanced Interaction + Experiential Design	
ART 390	Mixed Media	
Select three courses in Art History, any period		9
The following special methods sequence is also required:		
EDCI 436	Secondary Art Methods	3
EDCI 446	Secondary Art Methods Practicum	1
Total Hours		52

B. 20-Credit Art Teaching Minor

Code	Title	Hours
ART 100	World Art and Culture	3
ART 110	Integrated Art and Design Communication	2
ART 111	Drawing I	3
ART 112	Drawing as Integrated Design Thinking	2
ART 121	Integrated Design Process	2
ART 122	Art & Design Process	3
Select courses from the following:		6
ART 221	Introduction to Graphic Design	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Interaction Design I	
ART 280 or ART 321	Understanding Photography Graphic Design: Concepts	
ART 330	Intermediate/Advanced Painting (Max 12 credits)	
ART 340	Intermediate/Advanced Sculpture (Max 9 credits)	
ART 350	Intermediate/Advanced Printmaking (Max 12 credits)	
ART 370	Intermediate/Advanced Interaction + Experiential Design (Max 9 credits)	
ART 390	Mixed Media (Max 12 credits)	
Secondary candidates only:		
EDCI 325	Elementary Art Education	
Candidates must also complete the following methods courses:		
EDCI 325	Elementary Art Education	3
EDCI 436	Secondary Art Methods	3
EDCI 446	Secondary Art Methods Practicum	1
Total Hours		28

Basic Mathematics

Basic Mathematics Teaching Minor (21 cr)

Code	Title	Hours
EDCI 411	Geometry, Measurement, and Trigonometry	3
EDCI 413	Data Analysis and Probability	3
EDCI 416	Proportional and Algebraic Reasoning	3
MTHE 409	Algebraic and Functional Reasoning	3
MTHE 410	Proof and Viable Argumentation	3
Select one of the following two options:		6
Elementary Teacher Candidates:		
MTHE 235	Mathematics for Elementary Teachers I	
MTHE 236	Mathematics for Elementary Teachers II	
Secondary Teacher Candidates:		
Advisor approved electives		
Total Hours		21

Biological Sciences

Note: MATH 143 is a prerequisite to required physics courses. To graduate in this program, students must earn a minimum grade of C in BIOL 114 and BIOL 115 and must have a minimum gpa of 2.40 in BIOL 114, BIOL 115, BIOL 213, BIOL 310, and BIOL 312.

A. 45-Credit Composite Teaching Major

Code	Title	Hours
Special Methods Sequence:		
EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 213	Principles of Biological Structure and Function	4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
BIOL 421	Advanced Evolution/Population Dynamics	3
CHEM 101 or CHEM 111	Introduction to Chemistry General Chemistry I	3
CHEM 101L or CHEM 111L	Introduction to Chemistry Laboratory General Chemistry I Laboratory	1
CHEM 275 or CHEM 277	Carbon Compounds Organic Chemistry I	3

PHYS 111 & 111L	General Physics I and General Physics I Lab	4
PHYS 112 & 112L	General Physics II and General Physics II Lab	4
Select 3-4 credits of electives [1]		3-4
Total Hours		49-50

[1] See list of electives for the Biology major (p. 333)in the Department of Biological Sciences (p. 333).

B. 24-Credit Composite Teaching Minor

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 213	Principles of Biological Structure and Function	4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
Total Hours		24

Business Education

24 to 27-Credit Business Education Teaching Minor

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
or ACCT 202	Introduction to Managerial Accounting	
CTE 415	Productivity Software in Business Education	3
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1-3
CTE 492	Business and Marketing Education Methods	3
CTE 495	Administrative Technology Management and Procedures	3
FCS 448	Consumer Economic Issues	3
MHR 311	Introduction to Management	3
or MKTG 321	Marketing	
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Total Hours		24-27

Note: This minor will not meet professional-technical certification requirements, but will enable the student to apply for a provisional professional-technical certificate.

Other required courses for professional-technical certification include:

Code	Title	Hours
CTE 351	Principles and Philosophy of Career and Technical Education	3
CTE 464	Career Guidance and Transitioning to Work	3

Chemistry

Note: See the physics and mathematics prerequisites for the chemistry courses listed below.

A. 45-Credit Chemistry Teaching Major

Code	Title	Hours
BIOL 114	Organisms and Environments	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 302	Principles of Physical Chemistry	3
CHEM 303	Principles of Physical Chemistry Lab	1
MATH 170	Calculus I	4
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
Select one Chemistry Elective		3
Select one of the following groups:		8-10
Group A:		
BIOL 380 & BIOL 382	Biochemistry I and Biochemistry I Laboratory	
CHEM 275 & CHEM 276	Carbon Compounds and Carbon Compounds Lab	
Group B:		
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	
CHEM 372 & CHEM 374	Organic Chemistry II and Organic Chemistry II: Lab	
In addition to the above, the following special methods sequence is also required:		
EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1
Total Hours		49-51

B. 21-Credit Chemistry Teaching Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2

CHEM 275	Carbon Compounds	3
CHEM 276	Carbon Compounds Lab	1
CHEM 302	Principles of Physical Chemistry	3
CHEM 303	Principles of Physical Chemistry Lab	1
Total Hours		21

Earth Science

Due to extensive course overlap, earth science majors may NOT select geology as a teaching minor.

45-Earth Science Teaching Major

Completion of the Earth Science Teaching Major involves completion of the following required courses and three or more advisor-approved elective courses to total 45 credits.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
GEOG 301	Meteorology	3
GEOG 313	Global Climate Change	3
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
GEOL 309	Ground Water Hydrology	3
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOL 335	Geomorphology	3
PHYS 103	General Astronomy	3
PHYS 104	Astronomy Lab	1
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Select one of the following:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
Select 9 credits of Advisor Approved Science electives:		9
GEOL 212	Principles of Paleontology	
GEOL 249	Mineralogy and Optical Mineralogy	
GEOL 290	Field Geology Methods	
GEOL 326	Igneous and Metamorphic Petrology	
GEOL 344	Earthquakes and Seismic Hazards	
GEOL 345	Structural Geology	
GEOL 361	Geology and the Environment	
GEOL 410	Techniques of Groundwater Study	
GEOL 423	Principles of Geochemistry	
Total Hours		45

21-22-Credit Earth Science Teaching Minor

Code	Title	Hours
GEOG 301	Meteorology	3
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
GEOL 335	Geomorphology	3
PHYS 103	General Astronomy	3
PHYS 104	Astronomy Lab	1
Select one of the following:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
Select one of the following:		3-4
GEOL 212	Principles of Paleontology	
GEOL 249	Mineralogy and Optical Mineralogy	
GEOL 290	Field Geology Methods	
GEOL 324	Principles of Stratigraphy and Sedimentation	
GEOL 326	Igneous and Metamorphic Petrology	
GEOL 344	Earthquakes and Seismic Hazards	
GEOL 345	Structural Geology	
GEOL 361	Geology and the Environment	
GEOL 410	Techniques of Groundwater Study	
GEOL 422	Principles of Geophysics	
GEOL 423	Principles of Geochemistry	
Total Hours		21-22

Economics

A teaching major in economics is not offered.

20-Credit Economics Teaching Minor

Code	Title	Hours
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
CTE 418	Teaching Economics and Personal Finance	3
FCS 448	Consumer Economic Issues	3
Select Additional upper-division credits in Economics in one of the following areas:		8
Agriculture Science and Technology		
Accounting		
Business Education		
Economics		
Family and Consumer Science		
Finance		
Marketing Education		
Total Hours		20

Engineering and Technology Education

31-Credit Engineering and Technology Education Teaching Minor

For certification to teach technology education, a teaching minor must contain at least 20 credits distributed among and including each of the areas of communication technology; manufacturing technology;

computer applications; power, energy & transportation; construction technology; principles of technology; and electronics technology.

Code	Title	Hours
CTE 130	Introduction to Electricity and Electronics	3
CTE 354	Construction Technology	3
CTE 370	Transportation & Engineering Technologies	3
CTE 462	Communication Technology	3
Other required courses for professional-technical certification include:		
CTE 351	Principles and Philosophy of Career and Technical Education	3
CTE 447	Diverse Populations and Individual Differences	2-3
CTE 464	Career Guidance and Transitioning to Work	3
CTE Electives to total 31 credits		9-10
Total Hours		29-31

English

A. 46-Credit English Teaching Major

Code	Title	Hours
ENGL 175	Literature and Ideas	3
or ENGL 215	Introduction to English Studies	
ENGL 201	English Grammar: Key Concepts and Terms	1
ENGL 241	Intro to the Study of Language	3
ENGL 309	Rhetorical Style	3
ENGL 267	Survey of British Literature I	3
or ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	3
ENGL 278	Survey of American Literature II	3
ENGL 345	Studies in Shakespeare	3
ENGL 401	Writing Workshop for Teachers	3
ENGL/EDCI 445	Literature for Adolescents (or one 400-Level English Literature Course)	3
ENGL 442	Introduction to Morphology and Syntax	3
ENGL 496	History of the English Language	3
Select two 400-level English area courses		6
Select one of the following:		3
ENGL 208	Personal & Exploratory Writing	
ENGL 291	Beginning Poetry Writing	
ENGL 292	Beginning Fiction Writing	
ENGL 293	Beginning Nonfiction Writing	
Select one literature course focusing on multicultural literature:		3
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 481	Seminar in Women's Literature	
ENGL 482	Seminar in Major Authors	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 385	Studies in Global Anglophone Literatures	
In addition, the following special methods sequence is also required		
EDCI 431	Secondary English Methods	3
EDCI 441	Secondary English Practicum	1
Total Hours		50

B. 34-Credit English Teaching Major

Code	Title	Hours
ENGL 175	Literature and Ideas	3
or ENGL 215	Introduction to English Studies	
ENGL 201	English Grammar: Key Concepts and Terms	1
ENGL 241	Intro to the Study of Language	3
ENGL 267	Survey of British Literature I	3
or ENGL 278	Survey of American Literature II	
ENGL 277	Survey of American Literature I	3
ENGL 278	Survey of American Literature II	3
ENGL 309	Rhetorical Style	3
ENGL 345	Studies in Shakespeare	3
ENGL 401	Writing Workshop for Teachers	3
ENGL 442	Introduction to Morphology and Syntax	3
or ENGL 496	History of the English Language	
ENGL/EDCI 445	Literature for Adolescents (or one 400-level English Literature course)	3
Select one literature course focusing on multicultural literature:		3
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 481	Seminar in Women's Literature	
ENGL 482	Seminar in Major Authors	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
or ENGL 385	Studies in Global Anglophone Literatures	
In addition, the following special methods sequence is also required:		
EDCI 431	Secondary English Methods	3
EDCI 441	Secondary English Practicum	1
Total Hours		38

C. 22-Credit English Teaching Minor

Code	Title	Hours
ENGL 175	Literature and Ideas	3
or ENGL 215	Introduction to English Studies	
ENGL 201	English Grammar: Key Concepts and Terms	1
ENGL 241	Intro to the Study of Language	3
ENGL 309	Rhetorical Style	3
ENGL 401	Writing Workshop for Teachers	3
ENGL 267	Survey of British Literature I	3
or ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	3
or ENGL 278	Survey of American Literature II	
Select one literature course focusing on multicultural literature:		3
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 481	Seminar in Women's Literature	
ENGL 482	Seminar in Major Authors	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	

	or ENGL 385 Studies in Global Anglophone Literatures	
Total Hours		22

English as a New Language

A teaching major in English as a second language is not offered.

21-Credit English as a New Language Teaching Minor

Code	Title	Hours
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 448	Introduction to ENL	3
or EDCI 548	Introduction to ENL	
EDCI 449	ENL Methods	3
or EDCI 549	ENL Methods	
EDCI 466	Literacy Assessment and Intervention	3
Select one English Language/Linguistics Course [1]		3
Practicum or Field Experience in ENL [2]		1
Select 4 credits of Modern language other than English from the following subjects:		4
Chinese		
French		
German		
Japanese		
Nez Perce		
Spanish		
Total Hours		20

1 e.g. ENGL 241 Intro to the Study of Language, ANTH 241 Introduction to the Study of Language, ENGL 413 ESL Meth I:Basic Oral/Aural Skills.

2 e.g. EDCI 402 Practicum, EDCI 597 Practicum

Courses to total 21 credits

Exceptional Child Generalist Teaching Major

A. 31 Credit Exceptional Child Generalist Teaching Major

Code	Title	Hours
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
EDSP 325	Supporting Student Behaviors in the Classroom	2
EDSP 350	Language and Communication Development and Disorders	3
EDSP 423	Collaboration	3
EDSP 425	Evaluation of Children and Youth	3
EDSP 426	Developing Instructional Programs	3
EDSP 430	Assistive Technology and Universal Design for Learning for PreK-12	2
EDSP 448	Special Education Curriculum	3
EDSP 484	Special Education Internship II	1-15

Secondary Ed Majors Must also take:

Code	Title	Hours
EDCI 320	Teaching Reading and Literacy	3
MTHE 235	Mathematics for Elementary Teachers I	3
MTHE 236	Mathematics for Elementary Teachers II	3

French

Basic language courses taken in high school or elsewhere may be evaluated for college equivalencies as part of this teaching major and minor. Consult the Department of Modern Languages & Cultures (p. 260) for policies on earning credit for vertically-related courses.

A. 45-Credit French Teaching Major

Code	Title	Hours
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
FREN 301	Advanced French Grammar	3
FREN 302	Advanced French Writing Skills	3
FREN 304	Connecting French Language and Culture	3
FREN 408	French and Francophone Culture and Institutions	3
FREN 449	Practicum in Tutoring	1
Select electives from the following:		7-10
ENGL 241	Intro to the Study of Language	
FLEN 243	English Word Origins	
Approved Upper-Division Course in Literature		
Approved Upper-Division French Electives		
Approved upper division French Electives to total 45 credits		6-9
In addition, the following special methods sequence is also required:		
EDCI 437	Secondary Foreign Language Methods	3
EDCI 447	Secondary Foreign Language Methods Practicum	1
Total Hours		46-52

Approved upper division French electives to total 45 credits in the teaching major.

B. 23-Credit French Teaching Minor

Code	Title	Hours
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
EDCI 437	Secondary Foreign Language Methods	3
EDCI 447	Secondary Foreign Language Methods Practicum	1
FREN 301	Advanced French Grammar	3
or FREN 302	Advanced French Writing Skills	
Total Hours		23

Geography

A. 28-Credit Geography Teaching Major

Code	Title	Hours
GEOG 100	Physical Geography	3
GEOG 100L	Physical Geography Lab	1
GEOG 165	Human Geography	3
GEOG 200	World Regional Geography	3
GEOG 385	GIS Primer	3
Select five courses from the following:		15
GEOG 330	Urban Geography	
GEOG 345	Global Economic Geography	
GEOG 360	Population Dynamics and Distribution (Max 4 credits)	
GEOG 365	Political Geography	
GEOG 390	Cartographic Design & Geovisualization	
GEOG 401	Climatology	
Total Hours		28

B. 24-Credit Geography Teaching Minor

Code	Title	Hours
GEOG 100	Physical Geography	3
GEOG 100L	Physical Geography Lab	1
GEOG 165	Human Geography	3
GEOG 200	World Regional Geography	3
GEOG 345	Global Economic Geography	3
GEOG 385	GIS Primer	3
Select 4 credits of additional Geography courses [1]		4
Candidates must also complete the following methods sequence:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		24

[1] Geography courses to total 20 credits.

German

Basic language courses taken in high school or elsewhere may be evaluated for college equivalences as part of this teaching major and minor. Consult the Department of Modern Languages & Cultures (p. 260) for policies on earning credit for vertically-related courses.

A. 45-Credit German Teaching Major

Code	Title	Hours
ENGL 241	Intro to the Study of Language	3
FLEN 324	Topics in German Literature in Translation	3
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
GERM 301	German Reading and Writing	3
GERM 302	German Listening and Speaking	3
Select approved Upper Division German Electives [1]		17
In addition, the following special methods sequence is also required:		
EDCI 437	Secondary Foreign Language Methods	3
EDCI 447	Secondary Foreign Language Methods Practicum	1
Total Hours		49

[1] German electives should include at least one 400-level course, to total 45 credits in the teaching major.

B. 23-Credit German Teaching Minor

Code	Title	Hours
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
EDCI 437	Secondary Foreign Language Methods	3
EDCI 447	Secondary Foreign Language Methods Practicum	1
GERM 301	German Reading and Writing	3
or GERM 302	German Listening and Speaking	
Total Hours		23

Health Education

28-Credit Health Education Teaching Minor

A current advanced first aid and emergency care card is required upon graduation.

Code	Title	Hours
FCS 205	Concepts in Human Nutrition	3
H&S 150	Wellness Lifestyles	3
or MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	
H&S 423/523	Health Education Methods	3
H&S 450	Critical Health Issues	3
H&S 451	Psychosocial Determinants of Health	3
H&S 490	Health Promotion	3
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
or MVSC 586	Healthy Active Lifestyle Assessment and Intervention	
PSYC 330	Human Sexuality	3
Select one of the following sequences:		4
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	
BIOL 120	Human Anatomy	
BIOL 154 & BIOL 155	Introductory Microbiology and Introductory Microbiology Laboratory	
Total Hours		28

History

A. 45-Credit History Teaching Major

Code	Title	Hours
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 290	The Historian's Craft	3
Upper-Division History Courses		
Select 3 credits of Non-Regional U.S. History courses		3
Select 3 credits of Latin American History courses		3
Select 3 credits of Asian or African History courses		3
Select 3 credits of Pre-1750 History from Any Region courses		3
Select 3 credits of American Non-European Ethnic History courses		3
Select 3 credits of Modern European History courses		3
Additional Upper-Division History Courses [1]		9
In addition, the following special methods sequence is also required:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		46

[1] Approved Upper Division History Electives to total 45 credits in the teaching major. *Note: A single course may satisfy more than one of the upper-division requirements.*

B. 33-Credit History Teaching Major

Code	Title	Hours
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 290	The Historian's Craft	3
Upper-Division History Courses [2]		
Select 3 credits of Non-Regional U.S. History courses		3
Select 3 credits of Latin American History courses		3
Select 3 credits of Asian or African History courses		3
Select 3 credits of Pre-1750 History from Any Region courses		3
Select 3 credits of Modern European History courses		3
In addition, the following special methods sequence is also required:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		34

[2] Approved Upper Division History Electives to total 33 credits in the teaching major. *Note: A single course may satisfy more than one of the upper-division requirements.*

C. 21-Credit History Teaching Minor

Code	Title	Hours
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
POLS 101	American National Government	3
or POLS 275	American State and Local Government	
Select at least 3 credits of US, Latin American, or African History upper-dvision courses		3
Select at least 3 credits of Ancient, European, or Asian History upper-division courses		3
Candidates must also complete the following methods sequence:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		25

Library Science

A teaching major in library science is not offered.

27-Credit Library Science Teaching Minor

The teaching minor in library science must total 27 credits in the areas of collection development/materials selection; literature for children and/or young adults; organization of information (cataloging and classification); school library administration/management; library information technologies; information literacy; and reference and information services. This teaching minor will qualify the student for the Idaho K-12 Teacher Librarian Endorsement. Because library science is not a teaching field, the teacher librarian must also qualify for a standard Idaho elementary or secondary teacher's certificate.

Code	Title	Hours
LIBS 410	Libraries and their Collection: Materials Selection	3
LIBS 413	Computer Applications in Libraries	3
LIBS 414	Reference and Information Services	3
LIBS 418	Classification and Cataloging	3
LIBS 425	School Library Administration, Leadership, and Management	3
LIBS 427	Library and Media Center Practicum	3
LIBS 430	Children's Literature for Teacher Librarian	3
LIBS 431	Adolescent Literature for Teacher Librarians	3
LIBS 433	Information Literacy for the Teacher Librarian	3
Total Hours		27

Mathematics

MATH 143 and MATH 144 may be necessary prerequisites for students with weak backgrounds.

A. 51-52-Credit Mathematics Teaching Major

Code	Title	Hours
CS 112	Computational Thinking and Problem Solving	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 275	Calculus III	3

MATH 330	Linear Algebra	3
MATH 388	History of Mathematics	3
MATH 427	Transformational Geometry	3
MTHE 409	Algebraic and Functional Reasoning	3
MATH 461	Abstract Algebra I	3
MATH 471	Introduction to Analysis I	3
MATH 390	Axiomatic Geometry	3
or MATH 391	Modern Geometry	
Select one of the following:		3-4
STAT 251	Statistical Methods	
STAT 301	Probability and Statistics	
MATH/STAT 451	Probability Theory	
Select one of the following:		3
MATH 430	Advanced Linear Algebra	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 462	Abstract Algebra II	
MATH 472	Introduction to Analysis II	
MATH 476	Combinatorics	
In addition, the following special methods sequence is also required:		
EDCI 434	Secondary Mathematics Methods	3
EDCI 454	Secondary Mathematics Methods Practicum	1
Total Hours		51-52

B. 36-37-Credit Mathematics Teaching Major

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 330	Linear Algebra	3
MATH 427	Transformational Geometry	3
MTHE 409	Algebraic and Functional Reasoning	3
MATH 390	Axiomatic Geometry	3
or MATH 391	Modern Geometry	
MATH 461	Abstract Algebra I	3
or MATH 471	Introduction to Analysis I	
Select one of the following:		3-4
STAT 251	Statistical Methods	
STAT 301	Probability and Statistics	
MATH 451	Probability Theory	
In addition, the following special methods sequence is also required:		
EDCI 434	Secondary Mathematics Methods	3
EDCI 454	Secondary Mathematics Methods Practicum	1
Total Hours		36-37

C. 33-Credit Mathematics Teaching Minor

Code	Title	Hours
EDCI 413	Data Analysis and Probability	3
EDCI 416	Proportional and Algebraic Reasoning	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 330	Linear Algebra	3
MATH 390	Axiomatic Geometry	3
or MATH 391	Modern Geometry	
MTHE 409	Algebraic and Functional Reasoning	3
MTHE 410	Proof and Viable Argumentation	3
In addition, the following special methods sequence is also required:		
EDCI 434	Secondary Mathematics Methods	3
EDCI 454	Secondary Mathematics Methods Practicum	1
Total Hours		33

Music Education

26-Credit Vocal Music Teaching Minor

Code	Title	Hours
MUSA 114	Studio Instruction [1]	2
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 387	Conducting I	2
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUST 385	Choral Music in the Secondary School	3
MUSI 100	Introduction to Music	3
or MUSH 111	Introduction to Music Literature	
MUSX 140	Recital Attendance (Two semesters required.)	0
Select 4 credits of Vocal Ensembles		4
Total Hours		26

[1] If students do not qualify immediately for MUSA 114 Studio Instruction, they must take Voice Class until they can meet departmental approval.

Natural Science

45-Credit Natural Science Teaching Major

Must hold an existing endorsement in one of the following areas: Biological Science, Chemistry, Earth Science, Geology, or Physics; and complete a total of twenty-four (24) semester credit hours as follows:

- Existing Biological Science Endorsement (p. 180). Eight (8) semester credit hours in each of the following areas:
  - Physics, Chemistry, Earth Science/Geology.
- Existing Physics Endorsement (p. 188). Eight (8) semester credit hours in each of the following areas:
  - Biology, Chemistry, Earth Science/Geology.
- Existing Chemistry Endorsement (p. 181). Eight (8) semester credit hours in each of the following areas:
  - Biology, Physics, Earth Science/Geology.

- Existing Earth Science or Geology Endorsement (p. 182). Eight (8) semester credit hours in each of the following areas:
  - Biology, Physics, Chemistry.

Online Teaching

20-Credit Online Teaching Teaching Minor

Code	Title	Hours
EDCI 410	Technology, Teaching and Learning	2
EDCI 581	Theoretical Foundations of Online Learning	3
EDCI 582	Online Course Design	3
EDCI 583	Open Education	3
EDCI 595	Practicum in Online Learning	3
Approved CTE Courses to total 20 credits		6
Total Hours		20

Physical Education

Physical Education Teaching Minor (Grade levels 1-12)

An academic major in Physical Education Teacher Education is offered through the Department of Movement Science leading to the degree of B.S.Ed. For information on the undergraduate major in Physical Education- see the Department of Movement Sciences (p. 193) section.

Code	Title	Hours
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 107	Movement Fundamentals	1
PEB 108	Water-Based Sports & Fit Act	1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	1
PEP 133	Skill and Analysis of Target and Invasion Activities	1
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	1
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 360	Motor Behavior	3
PEP 412	Elementary Methods in Physical Activity Pedagogy	3
PEP 413	Foundations and Assessment in Physical Activity Pedagogy	3
PEP 418	Physiology of Exercise	2
PEP 421	Secondary Methods in Physical Activity Pedagogy	3
PEP 424	Inclusive Physical Education and Recreation	3
First Aid and CPR Certificate		
Total Hours		31

Physical Sciences

45-Credit Composite Teaching Major

This is a 40-credit composite teaching major consisting of courses in chemistry, geology, and physics. A teaching minor in mathematics is recommended to accompany this teaching major.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 275	Carbon Compounds	3
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	4
PHYS 103	General Astronomy	3
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	4
PHYS 213	Engineering Physics III	3
PHYS 411	Advanced Physics Lab	4
Select one of the following:		3-4
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	
BIOL 114	Organisms and Environments	
GEOG 100 & 100L	Physical Geography and Physical Geography Lab	
GEOG 401	Climatology	
Select Additional Electives in Chemistry Geology or Physics to total 45 credits [1]		2-3
In addition, the following special methods sequence is also required:		
EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1
Total Hours		43-45

[1] Recommended Elective courses include BIOL 380 Biochemistry I & CHEM 302 Principles of Physical Chemistry (2-3 cr).

Physics

A. 45-Credit Physics Teaching Major

Code	Title	Hours
BIOL 114	Organisms and Environments	4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 103	General Astronomy	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
PHYS 411	Advanced Physics Lab	4
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	

Select approved upper division Physics electives to total 45 credits in the teaching major		5
In addition, the following special methods sequence is also required:		
EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1
Total Hours		49

B. 20-Credit Physics Teaching Minor

Code	Title	Hours
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
Select Physics electives approved by advisor in Dept of Physics, including at least 2 credits of lab work.		6
Total Hours		20

Political Science

A. 30-Credit Political Science Teaching Major

A minimum of 30 credits in political science courses is required with an additional 6 credits in US history necessary for certification. Courses listed in more than one field may be counted in only one of those fields. Substitutions in specific courses may be made with the consent of the advisor.

Code	Title	Hours
POLS 101	American National Government	3
Select 6 credits of U.S. History electives		6
Select 9-12 credits from the following:		9-12
POLS 275	American State and Local Government	
POLS 437	American Presidency	
PHIL 469	The Judicial Process	
Select at least 3 credits of Comparative Government and Politics courses from the following:		3
POLS 381	European Politics	
POLS 480	Politics of Development	
POLS 487	Political Violence and Revolution	
Select at least 3 credits of International Relations courses from the following:		3
POLS 237	Introduction to International Politics	
POLS 440	International Organizations & International Law	
POLS 449	World Politics and War	
Select at least 3 credits of Public Administration and Public Law courses from the following:		3
POLS 451	Public Administration	
POLS 454	Public Organization Theory	
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
Select at least 3 credits of Political Thought courses from the following:		3
POLS 425	History of Political Philosophy I	
POLS 426	History of Political Philosophy II	
POLS 428	American Political Thought	
POLS 429	Contemporary Political Ethics	
In addition, the following special methods sequence is also required:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		34-37

B. 20 Credit American Government and Political Science Teaching Minor

A minimum of 20 credits in political science courses is required with an additional 6 credits in US history necessary for certification.

Code	Title	Hours
POLS 101	American National Government	3
Select 3 credits of U.S. Governement courses from the teaching major above		3
Select 3 credits of Comparative Goverment courses from the teaching major above		3
Select 12 credits of other Political Science electives from courses listed in the teaching major		11
Select 6 credits of US History electives		6
Total Hours		26

Social Science

A. 56-Credit Composite Teaching Major

The basic objective of this teaching major is to provide the undergraduate student with the preparation that leads to teaching social studies in the public schools. To obtain a social studies endorsement in the state of Idaho, a student must pass the Praxis II exam in both social studies content knowledge and in one of the other areas listed below (Economics, Geography, History, or Political Science) where they have a minimum of 20 credits of coursework. This will result in a student being endorsed to teach in any of the subject areas included in the composite major.

Idaho's federal representatives have approved the Social Studies endorsement as meeting "Highly Qualified" status for all four of the related core content areas; history, geography, economics, and government.

It is important to note that the converse is not true. If a teacher has an endorsement in one or more of the core social studies areas, but does NOT hold the full Social Studies endorsement, they cannot be considered "Highly Qualified" to teach in any area other than those for which they hold the specific endorsement.

Students need to choose one area (History, Economics, Geography, or Political Science) for an endorsement which includes 20 credit hours, and complete 12 credits in each of the other remaining content areas (History, Economics, Geography, or Political Science).

Code	Title	Hours
History		
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
Select one US, Latin American, or African History elective		3
Select one Ancient, European, or Asian History elective		3
Economics		
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
Select 6 credits of Economic electives from the following:		6
ACCT 201	Introduction to Financial Accounting	
CTE 418	Teaching Economics and Personal Finance	
CTE 492	Business and Marketing Education Methods	
ECON 351	Intermediate Macroeconomic Analysis	
ECON 352	Intermediate Microeconomic Analysis	
FCS 346	Personal and Family Finance and Management	
FCS 448	Consumer Economic Issues	
Geography		
GEOG 100	Physical Geography	3
GEOG 385	GIS Primer	3
Select 6 credits of Geography electives from the following:		6
GEOG 165	Human Geography	
GEOG 200	World Regional Geography	
GEOG 313	Global Climate Change	
GEOG 330	Urban Geography	
GEOG 345	Global Economic Geography	
GEOG 350	Geography of Development	
GEOG 360	Population Dynamics and Distribution	
GEOG 365	Political Geography	
GEOG 390	Cartographic Design & Geovisualization	
GEOG 401	Climatology	
GEOG 420	Land, Resources, and Environment	
Political Science		
POLS 101	American National Government	3
Select one of the following:		3
POLS 275	American State and Local Government	
POLS 331	American Political Parties and Elections	
POLS 332	American Congress	
POLS 333	American Political Culture	
POLS 338	American Foreign Policy	
Select 6 credits of Polictical Science electives from the following:		6
POLS 205	Introduction to Comparative Politics	
POLS 237	Introduction to International Politics	
POLS 381	European Politics	
POLS 440	International Organizations & International Law	
POLS 449	World Politics and War	
POLS Elective numbered 100-499		
In addition, the following special methods sequence is also required:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		58

B. 45- OR 60-Credit Teaching Major Through American Studies

American studies majors follow the credit distributions and recommended courses as stated above for economics, geography, history, political science, and sociology/anthropology.

Sociology/Anthropology

21-Credit Sociology/Anthropology Teaching Minor

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
ANTH 102	Cultural Anthropology	3
SOC 101	Introduction to Sociology	3
SOC 201	Introduction to Inequalities & Inclusion	3
SOC 311	Development of Social Theory	3
Select two electives in SOC, ANTH, or AIST		6
Total Hours		21

Note: EDCI 432 and EDCI 442 (methods and practicum) are also required for this endorsement.

Spanish

Basic language courses taken in high school or elsewhere may be evaluated for college equivalencies as part of this teaching major and minor. Consult the Department of Modern Languages & Cultures (p. 260) for policies on credit for vertically-related courses.

A. 45-Credit Spanish Teaching Major

Code	Title	Hours
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
SPAN 301	Advanced Grammar	3
SPAN 302	Advanced Composition	3
SPAN 305	Culture and Institutions of Spain	3
SPAN 306	Culture and Institutions of Latin America	3
Select 17 credits of Upper-division Spanish language courses [1]		17
In addition, the following special methods sequence is also required:		
EDCI 437	Secondary Foreign Language Methods	3
EDCI 447	Secondary Foreign Language Methods Practicum	1
Total Hours		49

[1] 9 credits must be at 400 level to total 45 credits in the teaching major. A maximum of 3 credits in FLEN 391 Hispanic Film or FLEN 394 Latin American Literature in Translation may be counted toward a teaching major in Spanish.

B. 22-Credit Spanish Teaching Minor

Code	Title	Hours
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
Select 6 credits of approved Upper-Division Spanish Electives [1]		6
In addition, the following special methods course is also required:		
EDCI 437	Secondary Foreign Language Methods	3
Total Hours		25

[1] Spanish Electives: Either SPAN 301 or SPAN 302 required; lab-based and lit in translation courses are not acceptable.

Technical Workforce Training Undergraduate Academic Certificate

Code	Title	Hours
CTE 420	Assessment in Contextual Learning Environments	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 447	Diverse Populations and Individual Differences	3
CTE 472	Teaching and Learning in Organizations	3
Total Hours		12

Courses to total 12 credits for this certificate

Theater

20-Credit Drama Teaching Minor

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
COMM 111	Introduction to Communication Studies	3
THE 101	Introduction to the Theatre	3
THE 102	Introduction to Design	3
THE 105	Basics of Performance I	3
THE 103	Theatre Technology I	3
THE 471	Directing	3
Total Hours		20

Note: EDCI 436 and EDCI 446 (methods and practicum) are also required for this endorsement.

Department of Leadership and Counseling

Kathy Canfield-Davis, Dept. Chair (208-292-1286; canfield@uidaho.edu).

Adult, Organizational Learning and Leadership

Adult, Organizational Learning and Leadership program prepares leaders in a wide range of careers including higher education, business, government agencies and nonprofit organizations. It offers a master's degree and also delivers a professional certificate in Human Resource Development. A doctorate (Ph.D. or Ed. D) with an Adult Organizational Learning and Leadership specialization is available as well.

Educational Leadership

The state and CAEP (Council for the Accreditation of Educator Preparation) accredited Educational Leadership program offers Masters (M.Ed.) and Specialist (Ed.S.) degrees for individuals seeking leadership roles in K-12 education. Principal, Superintendent, and Director of Special Education Certificates may be earned by completing an approved program of study. Courses are offered online with some live classes in designated locations. A doctorate (Ph.D. or Ed.D.) with an Educational Leadership specialization is available as well.

Rehabilitation Counseling and Human Services

Rehabilitation Counseling and Human Services is a Master's degree (M.Ed. or M.S.) 60 credit counseling program. This program is nationally accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP), the accrediting body for master's degree programs in counseling and its specialties. Students attending the program full time are able to complete it in two years and are accepted into the program at two locations Coeur d' Alene and Boise. Courses are offered during fall, spring and summer semesters. Course delivery is usually a combination of face-to-face, hybrid, and online/distance administration. Rehabilitation counseling is a specialty area of practice within the counseling profession assisting people with disabilities (physical, mental, developmental, cognitive and emotional) achieve their personal, career and independent living goals.

Leadership and Counseling Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Leadership and Counseling. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Educational Leadership (M.Ed.) (p. 192)
- Adult Organizational Learning and Leadership (M.S.) (p. 191)
- Rehabilitation Counseling and Human Services (M.Ed.) (p. 192)
- Rehabilitation Counseling and Human Services (M.S.) (p. 192)
- Education (Ph.D.) (p. 192)
- Human Resource Development Graduate Academic Certificate (p. 192)
- Rehabilitation Counseling Category R Graduate Academic Certificate (p. 192)

Adult Organizational Learning and Leadership (M.S.)

Master of Science. Major in Adult/ Organizational Learning and Leadership.

General M.S. Requirements apply.

Education (Ph.D.)

Doctor of Philosophy. Major in Education. Specialization in Higher Education.

The Ph.D. degrees in this field is offered through the College of Education (p. 170).

Program of Study

Prerequisite(s) Master's Degree (Up to **28** credits from the Master's degree may be applied to the **84** required).

Code	Title	Hours
Required Content Core		
HED 606	Organizational Development and Change in Higher Education	3
HED 607	Social Justice Leadership in Higher Education	3
HED 608	Stewardship of Higher Education	3
HED 609	Leadership in Higher Education	3
HED 610	Governance and Public Policy in Higher Education	3
HED 627	Law and Ethics in Higher Education	3
HED 625	Finance and Budgeting in Higher Education	3
Residency Requirement		
HED 623	Contemporary Issues in Higher Education [1]	5
Research		
ED 571	Introduction to Quantitative Research	3
ED 574	Survey of Qualitative Research	3
ED 680	Philosophical Foundations of Educational Research	3
HED 611	Research Internship in Higher Education	6
Select one additional Qualitative Quantitative ED course		3
Dissertation		
Select 12 credits for Dissertation		12
Total Hours		56

Courses to total 84 credits for this degree.

[1] This course is designed to meet a residency requirement by attending two, week-long sessions in the summers of 2016 and 2017. The 2016 session will be held on the Moscow campus. The 2017 session will be held on the Coeur d'Alene campus. During Spring semester of 2018, students must attend a three-day session on the Boise campus.

Educational Leadership (M.Ed.)

Applicants for M.Ed. degree are expected to meet the requirements for the teaching certificate and one year of teaching experience.

Master of Education. Major in Educational Leadership.

Educational leadership provides programs for the preparation of school administrators and for persons interested in teaching or administration in institutions of higher learning. Master of Education and Education Specialist degrees with an emphasis in educational leadership and options for a certificate as a principal and/or superintendent may be earned in the department. Ph.D. and Ed.D. with an emphasis in educational leadership and options for a certificate as a principal and/or superintendent may be earned through the college of Education.

Human Resource Development Graduate Academic Certificate

Code	Title	Hours
AOLL 510	Foundations of Human Resource Development	3
Select four of the following courses:		12
AOLL 526	Instructional Design and Curriculum	
AOLL 528	Program Planning, Development, and Evaluation	
AOLL 560	Career Development in Organizations	
AOLL 577	Organization Development	
AOLL 581	Theory & Practices & Challenges of Leadership	
AOLL 583	Organizational Leadership	
Total Hours		15

Courses to total 15 credits for this certificate

Rehabilitation Counseling and Human Services (M.Ed.)

Master of Education. Major in Rehabilitation Counseling and Human Services.

Applicants for M.Ed. degree are expected to meet the requirements for the teaching certificate and one year of teaching experience.

Rehabilitation Counseling and Human Services (M.S.)

Master of Science. Major in Rehabilitation Counseling and Human Services

General M.S. requirements apply.

Rehabilitation Counseling Category R Graduate Academic Certificate

Code	Title	Hours
RCHS 512	Theories and Applications of Counseling	3
RCHS 530	Legislative and Philosophical Foundations in Working with People with Disabilities	3
RCHS 531	Psycho-social Aspects of Disability	3
RCHS 534	Rehabilitation and Community Case Management	3
RCHS 535	Vocational Placement and Assistive Technology	3
RCHS 536	Professional Issues, Ethics, and Law in Counseling	2
Total Hours		17

Courses to total 17 credits for this certificate

Department of Movement Sciences

Philip W. Scruggs, Chair (101 Phys. Ed. Bldg. 83844-2401; phone 208-885-7921).

The Department of Movement Sciences is located in the College of Education, Health and Human Sciences. Our mission is to improve movement, health, and well-being through innovative research, transformative learning and beneficial engagement, while we aspire to cultivate healthy and physically active lifestyles to sustain the well-being of individuals and communities.

The department offers undergraduate Bachelor of Science (B.S.) degrees in Dance; Exercise, Sport, and Health Sciences; and Recreation, Sport and Tourism Management.

- The B.S. in Dance is designed to create a positive, student focused learning environment that promotes the whole person in preparation for dance careers and careers in related fields, such as professionals in dance education, performance and therapy. The Festival of Dance and Performing Arts Association is in residency within the department.
- The B.S. in Exercise, Sport, and Health Sciences includes five transcripted emphases: Community Health Education and Promotion; Fitness, Health, and Human Performance; Physical Education Teacher Education; Pre-Athletic Training; and Pre-Physical Therapy. Students are prepared for the many diverse fields of kinesiology, along with post-baccalaureate study in education, allied-clinical health fields, medicine, sport, and fitness. The emphasis area in Physical Education Teaching leads to K-12 teaching certification.
- The B.S. in Recreation, Sport and Tourism Management provides students with professional career options in leisure, recreation, and sport for leadership roles in organizations and communities, such as a recreation outfitter and guide, an events coordinator, a sports and/or fitness facility manager, a director of recreation, a leisure or travel tourism professional, etc.

The department offers graduate programs at the master's and doctoral levels. Doctoral programs include the Doctor of Athletic Training (D.A.T., online with a summer residential component) and Movement Sciences Ph.D. in Education, with specializations in Healthy Active Lifestyles and Exercise Science. The department offers master's degrees in Athletic Training (M.S.A.T., online with a summer residential component), Movement & Leisure Sciences (M.S., online and face to face), and Physical Education (M.Ed., online and face to face).

Movement Sciences also offers academic and teaching minors, which include: Health Education, Dance, Outdoor Recreation Leadership, Sustainable Tourism and Leisure Enterprises, and Physical Education. The department offers a certificate in Athletic Leadership.

The university-wide Physical and Dance Activity courses are delivered by Movement Sciences and include numerous recreational, fitness, dance, aquatic, and sport activity areas.

Majors

- Movement Sciences Undergraduate Curricular Requirements (p. 193)
- Dance (B.S.Dan.) (p. 195)
- Exercise, Sport, and Health Sciences (B.S.E.S.H.S.) (p. 196) with emphases in Physical Education Teaching; Fitness, Health and Human Performance; Pre-Athletic Training; Pre-Physical Therapy; and Community Health Education and Promotion
- Recreation, Sport, and Tourism Management (B.S.Rec.) (p. 198)

Minors

- Dance Minor (p. 196)
- Outdoor Recreation Leadership Minor (p. 198)
- Sustainable Tourism and Leisure Enterprises Minor (p. 199)
- Health Education Teaching Minor (p. 185)

Certificates

- Athletic Leadership Undergraduate Academic Certificate (p. 193)

Movement Sciences Graduate Program

The Graduate Record Examination is not required for admission to the master's and doctoral programs. However, candidates must fulfill the requirements of the College of Graduate Studies, the College of Education, Health and Human Sciences, and the Department of Movement Sciences. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Physical Education (M.Ed.) (p. 198)
- Athletic Training (M.S.A.T.) (p. 194)
- Movement and Leisure Sciences (M.S.) (p. 198)
- Movement Sciences (Ph.D.) (p. 198)
- Athletic Training (D.A.T.) (p. 194)

Movement Sciences Undergraduate Curricular Requirements

Course required in all majors in the Department of Movement Sciences

Code	Title	Hours
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3

Additional Department Course

The following additional department course is required in the Dance (B.S. Dance) degree, Exercise, Sport, and Health Science (B.S.E.S.H.S.) Physical Education Teacher Certification (PETC) and Community Health Education and Promotion Emphases, and in Exercise Science and Health Certified Health Education Specialist (CHES) certification in the Department of Movement Sciences, and offered as electives in the Recreation (B.S.Rec.) degree.

Code	Title	Hours
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3

Athletic Leadership Undergraduate Academic Certificate

Code	Title	Hours
PEP 475	Moral Reasoning in Sport	2
Select 7-9 credits of Leadership electives:		7-9

INTR 210	Life Skills for Student Athletes	
INTR 401	Career and Leadership Development	
ISEM 101		
ISEM 301		
IS 350	Sports and International Affairs	
PEP 301	Mental Training	
PEP 305	Applied Sports Psychology	
Select 1-3 credits of Athletic, Recreation, Performing Art, Fitness electives:		1-3
DAN 105	Dance	
PEB 106	Individual & Dual Sports	
PEB 107	Team Sports	
PEB 108	Water-Based Sports & Fit Act	
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
RSTM 108	Orienteering & Navigation	
RSTM 222	Cross Country Skiing	
RSTM 224	Whitewater Rafting	
RSTM 225	Kayaking	
RSTM 227	Mountain Biking	
Total Hours		10-14

Courses to total 12 credits for this certificate

Athletic Training (D.A.T.)

Doctor of Athletic Training. Major in Athletic Training.

The department offers a D.A.T. program. This program is designed for certified athletic trainers who are interested in improving their clinical practice through a structured academic program with a clinical practice residency. Please contact the department for any inquires in this program.

Code	Title	Hours
AT 606	Professional and Post-Professional Education in Athletic Training	3
AT 610	Advances in Manual Therapy	3
AT 611	Integrative Manual Therapy	3
AT 620	Research Methods and Evidence Based Practice in Patient Care	3
AT 621	Action Research in Patient Care	2
AT 622	Designing and Conducting Applied Research in Patient Care	2
AT 623	Introduction to Survey and Qualitative Research Design in Patient Care	3
AT 624	Advanced Quantitative Data Analysis and Interpretation in Patient Care	3
AT 625	Scientific Writing for Publication in Patient	3
AT 630	Holistic Foundations of Pain in Patient Care	2
AT 631	Theory and Application of Current and Novel Paradigms in Patient Care	2
AT 632	Integrative Patient Care for the Spine and Pelvic Girdle	3
AT 633	Application of Advanced Practice Skills: A Practice-Based Approach	3
AT 634	Introduction to Quantitative Data Analysis and Interpretation in Patient Care	2
AT 635	Intermediate Quantitative Data Analysis and Interpretation in Patient Care	2
AT 640	Clinical Residency and Analysis of Patient Care I	6
AT 641	Clinical Residency and Analysis of Patient Care II	6
AT 642	Clinical Residency and Analysis of Patient Care III	6
AT 643	Clinical Residency and Analysis of Patient Care IV	6
Total Hours		63

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Athletic Training (M.S.A.T.)

Master of Science in Athletic Training. Major in Athletic Training.

The M.S.A.T. is an entry level program designed to prepare students to become a certified athletic trainer. After successful completion of this program students will be eligible for the athletic training national Board of Certification Exam.

M.S.A.T. Admission Requirements.

Students are eligible to apply for admission to the MSAT program via two distinct routes:

Students who have obtained a bachelor's degree (3.0 or >3.0) and the required prerequisite coursework (4 credit hours of human anatomy or equivalent & 4 credit hours of human physiology or equivalent) are eligible for consideration of admission to the MSAT.

OR

Students who are enrolled in an academic institution with whom the University of Idaho and the MSAT have a 3+2 transitional program articulation[1] agreement may apply to the MSAT during their junior year of study for entrance in early summer with Tentative Admittance[2]. Students must be approved for application to the 3+2 program from their specified undergraduate program director (and have met the criteria within the articulation agreement) before they apply to the MSAT.[3]

1 The University of Idaho's 3+2 program leading to the application to the MSAT is the Bachelor of Science in Physical Education with a major in Exercise Science and Health (3+2 track). Please contact the Division of Athletic Training for information regarding other Universities with approved MSAT 3+2 articulation agreements.

[2] Students may be admitted to the MSAT "Tentatively", without first having had completed a Bachelor's degree. These students will apply the first two semesters of the MSAT curriculum to their undergraduate degree in order to satisfy their Bachelor's degree requirements. Students will apply for graduation during the Fall of their first year in the MSAT program and will have the "Tentative Admittance" removed upon fulfilling all requirements of their Bachelor's degree program.

[3] The 3+2 program will meet all other admission standards set forth by the College of Graduate Studies and the Masters of Science in Athletic Training Program.

The M.S.A.T. in Athletic Training requires the following courses:

Code	Title	Hours
AT 506	Clinical Anatomy I	3
AT 507	Care and Prevention of Injuries and Illnesses	3
AT 508	Evaluation and Diagnosis of Injuries and Illnesses I	4
AT 509	Principles of Rehabilitation	3
AT 510	Therapeutic Modalities	2
AT 511	Ethics and Administration in Athletic Training	3
AT 512	Research Methods & Statistics I	3
AT 513	General Medicine for Athletic Trainers	3
AT 514	Psychology of Injury and Referral	3
AT 520	Clinical Education I	2
AT 521	Clinical Experience I	4
AT 522	Clinical Education II	2
AT 523	Clinical Experience II	4
AT 531	Clinical Anatomy II	3
AT 532	Evaluation and Diagnosis of Injuries and Illnesses II	4
AT 533	Applied Rehabilitation Techniques	3
AT 534	Therapeutic Modalities II	2
AT 535	Seminar in Athletic Training	1
AT 536	Research Methods & Statistics II	3
AT 540	Pharmacology for Athletic Trainers	3
AT 541	Seminar in Athletic Training II	2
AT 542	Scientific Inquiry and Research Presentation	3
AT 543	Neuroscience for Athletic Trainers	3
AT 547	Critical Issues in Athletic Training Clinical Practice	3
AT 550	Clinical Education III	2
AT 551	Clinical Experience III	4
AT 552	Clinical Education IV	2
AT 553	Clinical Experience IV	4
AT 587	Prevention and Health Promotion in Athletic Training	3
Total Hours		84

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Dance (B.S.Dan.)

A successful audition is required for admission to the degree program. To graduate in this program, a minimum grade of 'C' must be earned in all required courses. To participate in departmental productions, a student must maintain a minimum GPA of 2.50. Please contact the Department of Movement Sciences at 208-885-7921 for audition information. Required coursework includes the university requirements (see regulation J-3 (p. 91)), the Department of Movement Sciences core course MVSC 201 and the following course work:

Code	Title	Hours
Movement Sciences Undergraduate Curricular Requirements (p. 193)		6
Major Requirements		67-68
Total Hours		73-74

Major Requirements

Code	Title	Hours
BIOL 120	Human Anatomy	4
DAN 101	Dance Seminar	1
DAN 210	Dance Performance (4 credits required)	4
DAN 211	Dance Conditioning (2 classes required)	2
DAN 284	Dance Improvisation	1
DAN 321	Dance Pedagogy	3
DAN 324	Integrated Movement Practices	3
DAN 360	Teaching Creative Dance for Children	1
DAN 384	Dance Composition I	3
DAN 385	Dance Composition II	3
DAN 410	Pre-professional Dance Performance (4 credits required)	4
DAN 412	Choreography Lab	2
DAN 421	Dance History and Contemporary Views	3
DAN 422	Labanalysis	3
DAN 490	Senior Project	2
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 360	Motor Behavior	3
Select 16 credits of Technique: [1]		16
DAN 216	Technique	
DAN 416	Technique	
Select two courses from the following:		2
MUSA 114	Studio Instruction	
MUSA 145	Piano Class for Music Majors/Minors	
MUSA 146	Piano Class for Music Majors/Minors	
MUSA 147	Voice Class	
MUSA 365	Chamber Ensemble	
Select one course from the following:		2-3
THE 105	Basics of Performance I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
THE 320	Theatre Management	
Total Hours		65-66

[1] Must include a minimum of 6 semesters each of ballet and modern. Students may retake the same technique class up to 8 times and/or supplement their training in DAN 216/DAN 416 course offerings to meet their 16 cr requirement). Students must take a minimum of 2 semesters of DAN 416 in both ballet and modern.

Courses to total 128 credits for this degree

Dance Minor

Code	Title	Hours
DAN 210	Dance Performance	2
DAN 211	Dance Conditioning	1
DAN 284	Dance Improvisation	1
DAN 321	Dance Pedagogy	3
DAN 360	Teaching Creative Dance for Children	1
DAN 384	Dance Composition I	3
DAN 421	Dance History and Contemporary Views	3
Select one of the following:		3
DAN 324	Integrated Movement Practices	
DAN 385	Dance Composition II	
DAN 422	Labanalysis	
Select 6 credits from Ballet or Modern		6
DAN 216	Technique	
DAN 416	Technique	
Select 2 credits from other dance idioms		2
DAN 216	Technique	
DAN 416	Technique	
Total Hours		25

Courses to total 25 credits for this minor

Exercise, Sport, and Health Sciences (B.S.E.S.H.S.)

Exercise Science & Health majors must maintain a UI cumulative GPA of 2.30 or better in order to enroll in 300-level or higher Movement Science sequence coursework. In addition, Exercise Science & Health majors must have a UI cumulative GPA of 2.30 or greater to graduate. Acceptance into the Teacher Education program for the Physical Education Track requires a minimum GPA of 2.75.

Required course work includes the university requirements (see regulation J-3 (p. 91)), the Department of Movement Sciences core course MVSC 201, and the following:

Major Requirements

Code	Title	Hours
BIOL 120	Human Anatomy	4
BIOL 121	Human Physiology	4
COMM 101	Fundamentals of Oral Communication	2
FCS 205	Concepts in Human Nutrition	3
H&S 245	Introduction to Athletic Injuries	3
H&S 451	Psychosocial Determinants of Health	3
PEP 100	Introduction to Exercise Science & Health	1
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 360	Motor Behavior	3
PEP 418	Physiology of Exercise	2
PEP 418L	Physiology of Exercise Laboratory	1
PEP 455	Design & Analysis of Research in Movement Sciences	3
PEP 493	Fitness Assessment and Prescription	3
Emphases		
Select one of the following emphases:		27-49
Community Health Education and Promotion (p. 196)		
Fitness, Health, and Human Performance (p. 196)		
Pre-Physical Therapy (p. 197)		
Pre-Athletic Training (p. 197)		
Physical Education Teacher Certification (p. 197)		
Total Hours		62-84

A. Community Health Education and Promotion Emphasis

Code	Title	Hours
FCS 486	Nutrition in the Life Cycle	3
H&S 301	Peer Health Education	2
H&S 328	Community Health: Theory, Systems, and Practice	3
H&S 423	Health Education Methods	3
H&S 450	Critical Health Issues	3
H&S 490	Health Promotion	3
H&S 498	Internship	1-9
MVSC 445	Internship Preparation and Professional Development	1
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 495 & 495	Practicum and Practicum (Two at 1 credit each)	2
STAT 251	Statistical Methods	3
Total Hours		27-35

B. Fitness, Health, and Human Performance Emphasis

Code	Title	Hours
H&S 288	First Aid: Emergency Response	2
H&S 450	Critical Health Issues	3
H&S 490	Health Promotion	3
or PEP 305	Applied Sports Psychology	
MVSC 445	Internship Preparation and Professional Development	1
PEP 495 & 495	Practicum and Practicum (Two at 1 credit each)	2
PEP 498	Internship in Exercise Science & Health	9
Select 4 credits of PE Activity/Skill Classes (see advisor for selection).		4
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 313	Business Writing	

ENGL 317	Technical Writing	
Select one of the following:		1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
Total Hours		28

C. Pre-Physical Therapy Emphasis

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
H&S 450	Critical Health Issues	3
MVSC 445	Internship Preparation and Professional Development	1
PEP 495 & 495	Practicum and Practicum (Two at 1 credit each)	2
PEP 498	Internship in Exercise Science & Health (Summer preferred)	9
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
PSYC 305	Developmental Psychology	3
or PSYC 311	Abnormal Psychology	
STAT 251	Statistical Methods	3
Select 3 credits of PE Activity/Skill Classes (see advisor for selection).		3
Select one of the following:		1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
Total Hours		42

D. Pre-Athletic Training Emphasis

Code	Title	Hours
AT 506	Clinical Anatomy I	3
AT 507	Care and Prevention of Injuries and Illnesses	3
AT 508	Evaluation and Diagnosis of Injuries and Illnesses I	4
AT 509	Principles of Rehabilitation	3
AT 510	Therapeutic Modalities	2
AT 511	Ethics and Administration in Athletic Training	3
AT 512	Research Methods & Statistics I	3
AT 520	Clinical Education I	2
AT 521	Clinical Experience I	4
AT 587	Prevention and Health Promotion in Athletic Training	3
H&S 288	First Aid: Emergency Response (Or current Emergency Response or First Aid/CPR certification.)	2
PEP 171	Athletic Training Clinical Experience I - Observation	1
PEP 495	Practicum	1
Total Hours		34

[1] Students in the Pre-Athletic Training Emphasis who are admitted into the MSAT program after their junior year may transfer up to 30 credits from their first two terms of graduate level course work in the Master of Science in Athletic Training towards their Bachelor of Science Degree in Exercise, Sport, and Health Sciences with an Athletic Training Emphasis. Up to 8 credits of graduate level course work from the first year of the MSAT program may be counted towards the residency requirement (see J-2) for the BSESHS degree.

For more information on the MSAT see the Graduate Degree Programs section for this department.

E. Physical Education Teacher Certification Emphasis

Code	Title	Hours
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 401	Internship Seminar	1
EDCI 463	Literacy Methods for Content Learning	3
H&S 288	First Aid: Emergency Response	2
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 412	Elementary Methods in Physical Activity Pedagogy	3
PEP 413	Foundations and Assessment in Physical Activity Pedagogy	3
PEP 421	Secondary Methods in Physical Activity Pedagogy	3
PEP 424	Inclusive Physical Education and Recreation	3
PEP 484	Internship in Physical Education Teaching (14 credits required)	14
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 313	Business Writing	
ENGL 317	Technical Writing	
Select 5 credits from the following:		5
PEB 108	Water-Based Sports & Fit Act	
PEP 107	Movement Fundamentals	
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
Total Hours		49

Courses to total 120 credits for this degree

Additional Requirements for Health Certification

Code	Title	Hours
H&S 423	Health Education Methods	3
H&S 450	Critical Health Issues	3
FCS 240	Intimate Relationships	3
or PSYC 330	Human Sexuality	
Total Hours		9

Movement and Leisure Sciences (M.S.)

Master of Science. Major in Movement and Leisure Sciences.

This program provides students the skills, tools, and philosophy necessary to be servant leaders in organizations related to physical activity, sport and recreation

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Movement and Leisure Sciences (Ph.D.)

Doctor of Philosophy. Major in Education.

The department participates in the Ph.D. program in the College of Education, Health and Human Sciences with concentrations in sport pedagogy & character education or exercise science. Sport pedagogy & character education develops individuals who lead, serve, and research learning and teaching as applied to character and value laden issues in physical education and recreation. Exercise science prepares students to teach, conduct research, and provide services related to Exercise Science disciplines in higher education (exercise physiology, sport psychology, motor control, and biomechanics) and other exercise-related institutions.

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Outdoor Recreation Leadership Minor

Code	Title	Hours
RSTM 107	Outdoor Recreation and Adventure Sports	3
RSTM 108	Orienteering & Navigation	1
RSTM 290	Wilderness First Responder	3
RSTM 310	Outdoor and Adventure Leadership	3
Select 9 credits from the following:		9
RSTM 216	River Recreation and Water Craft Safety	
RSTM 218	Rock Climbing & Mountaineering	
RSTM 228	Avalanche Fundamentals	
RSTM 229	Swiftwater Rescue Training	
RSTM 240	Recreation and Sport Activities, Programming, and Marketing	
RSTM 254	Camp Leadership in Recreation and Sport	
RSTM 280	Practicum in Recreation, Sport, and Tourism	
RSTM 408	Experiential Education and Adventure Recreation	
Select 4 credits from the following:		4
PEB 106	Individual & Dual Sports [1]	
PEB 108	Water-Based Sports & Fit Act	
RSTM 204	Special Topics	
RSTM 222	Cross Country Skiing	
RSTM 224	Whitewater Rafting	
RSTM 225	Kayaking	
RSTM 227	Mountain Biking	
An approved technical competency [2]		
Total Hours		23

1 Wall Climbing, Advanced Wall Climbing, Fly Tying, Fly Fishing, Intro Archery/Hunting, Archery, Adventure Racing, Scuba, Mountain Biking.

2 Contact the Movement Sciences departments; practical exam administered by REC faculty. (max 4 cr)

Courses to total 23 credits for this minor

Physical Education (M.Ed.)

Master of Education. Major in Physical Education.

This program has two tracks available. The first track is designed to provide post-baccalaureate certification in teaching K-12 physical education. The second track is 100% delivered on-line and is designed for certified teachers who are interested in improving their teaching practice in physical education.

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Recreation, Sport, and Tourism Management (B.S.Rec.)

A minimum cumulative university GPA of 2.25 is required of all recreation majors who seek to take upper-division courses. Recreation majors must also achieve a minimum cumulative university GPA of 2.25 to graduate with a B.S.Rec. degree.

Required course work includes the university requirements (see regulation J-3 (p. 91)), an academic minor or 20 credits in an approved cognate area of study, the Department of Movement Sciences MVSC 201 core course and the following coursework:

Code	Title	Hours
Movement Sciences Undergraduate Curricular Requirements (p. 193)		3

Major Requirements	49-66
Total Hours	52-69

Major Requirements

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
H&S 288	First Aid: Emergency Response (or Emergency Responder Certification)	2-3
or RSTM 290	Wilderness First Responder	
NRS 310	Social Science Methods	3-4
or RSTM 455	Design & Analysis of Research in Movement Sciences	
RSTM 104	Introduction to Recreation, Sport, and Tourism Professions	3
RSTM 107	Outdoor Recreation and Adventure Sports	3
RSTM 240	Recreation and Sport Activities, Programming, and Marketing	3
RSTM 260	Foundations of Recreation	3
RSTM 280	Practicum in Recreation, Sport, and Tourism	1
RSTM 370	Health and Human Development in Recreation, Sport, and Tourism	3
RSTM 395	Diversity in Recreation, Sport and Tourism	3
RSTM 424	Inclusive Physical Education and Recreation	3
RSTM 490	Management and Entrepreneurship in Recreation, Sport, and Tourism	3
RSTM 485	Trends in Recreation, Sport and Tourism	3
RSTM 498	Internship in Recreation, Sport, and Tourism	1-16
Select 6 credits of additional courses from the following:		6
RSTM 254	Camp Leadership in Recreation and Sport	
RSTM 310	Outdoor and Adventure Leadership	
RSTM 380	Principles of Travel and Tourism	
RSTM 408	Experiential Education and Adventure Recreation	
RSTM 203	Workshop	
RSTM 204	Special Topics	
RSTM 299	Directed Study	
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 317	Technical Writing	
Select four credits from the following:		4
DAN 105	Dance	
PEB 106	Individual & Dual Sports	
PEB 107	Team Sports	
PEB 108	Water-Based Sports & Fit Act	
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
PEP 135	Skill and Analysis of Basketball and Volleyball	
PEP 136	Skill and Analysis of Soccer and Speedball	
RSTM 108	Orienteering & Navigation	
RSTM 222	Cross Country Skiing	
RSTM 224	Whitewater Rafting	
RSTM 225	Kayaking	
RSTM 227	Mountain Biking	
And/or other elective outdoor and adventure courses offered within the program as available		
Total Hours		49-66

Courses to total 120 credits for this degree

Sustainable Tourism and Leisure Enterprises Minor

Code	Title	Hours
MKTG 321	Marketing	3
NRS 386	Social-Ecological Systems	3
RSTM 490	Management and Entrepreneurship in Recreation, Sport, and Tourism	3
Select courses from the following:		10-12
ACCT 201	Introduction to Financial Accounting	
ACCT 202	Introduction to Managerial Accounting	
AGEC 477	Law, Ethics and the Environment	
AIST 401	Contemporary American Indian Issues	
MKTG 420	Integrated Marketing Communication	
NRS 475	Local and Regional Environmental Planning	
NRS 493	International Land Preservation and Conservation Systems	
GEOG 340	Business Location Decisions	
RSTM 104	Introduction to Recreation, Sport, and Tourism Professions	
RSTM 204	Special Topics	
RSTM 254	Camp Leadership in Recreation and Sport	
RSTM 280	Practicum in Recreation, Sport, and Tourism	
Total Hours		19-21

Courses to total 19 credits for this minor

COLLEGE OF ENGINEERING

Larry A. Stauffer, Dean (125 Janssen Engr. Bldg.; 208-885-6470); Joseph Law, Associate Dean Undergraduates; Barry Willis, Associate Dean Outreach; Vivek Utgikar Associate Dean Research

The mission of the College of Engineering is to prepare students for global professional practice, for admission to advanced degree programs, for leadership in their public and private lives, and for life-long learning in their chosen professions. We promote discovery, development, and dissemination of knowledge through excellence in research, and provide quality academic courses and continuing education to enhance the capability of practicing professionals. Through our scholarly activity, we have the responsibility to be a major contributor to our state, region, and nation's economic and technology base, while contributing to the body of knowledge for an array of research topics.

Our vision is to be an engine of innovation that integrates student-centered academics, relevant research, and meaningful outreach that advances Idaho and beyond.

The Engineering Profession

Members of the engineering profession use their knowledge of mathematics and the sciences to create useful and economic devices, structures, and systems for the benefit of the earth and its inhabitants. The engineer's talents are used in many ways: design, construction, and operation of public works and utilities systems; planning, construction, and operation of industrial processes and equipment; application of technical products; and creation of devices and systems needed for the support of all human activity, such as food production, transportation, communication, and enhancement of the environment. Many engineers hold responsible managerial positions; others are key members of the interdisciplinary teams that solve the complex technical, economic, and social problems of the world.

The engineering profession recognizes that social, economic, political, and cultural, as well as technical considerations are involved in most of the works in which the modern engineer is engaged. A part of an engineer's education is devoted to the humanities and the social sciences to help relate the technical preparation received to the world today, and to enhance the engineer's role as an educated, responsible citizen.

To qualify as an engineer, one usually undertakes a four-year college program leading to a Bachelor of Science (B.S.) degree in one of the major branches of engineering practice. Bachelor of Science graduates may either go directly into engineering employment or proceed to graduate study to pursue a given area of interest in depth. As the technology of engineering includes a wide range of subject matter that can be explored only to a limited extent in undergraduate programs, more and more students undertake graduate study for better preparation in a specific field before seeking employment as practicing engineers.

All states require that engineers engaged in work affecting public health and welfare be licensed or registered. This requires a qualifying examination in the fundamentals of engineering, usually taken during the last year of undergraduate study, and a period of practical experience followed by a second qualifying examination in the practice of engineering. Many industries, while not legally required to use registered engineers, encourage registration as evidence of professional stature of their engineering employees.

The Computer Science Profession

Computer science is a discipline that involves the understanding and design of computers and computational processes. In its most general form it is concerned with the understanding of information transfer and transformation. Computer science is evolving rapidly and includes theoretical studies, experimental methods, and engineering design all in one discipline. In computer science there is an inherent intermingling of the theoretical concepts of computability and algorithmic efficiency with the modern practical advancements in electronics that continue to stimulate advances in the discipline. It is this close interaction of the theoretical and design aspects of the field that binds them together into a single discipline.

Because of the rapid evolution it is difficult to provide a complete list of computer science areas. Yet it is clear that some of the crucial areas are theory, algorithms and data structures, programming methodology and languages, and computer elements and architecture. Other areas include software engineering, artificial intelligence, computer networking and communication, database systems, parallel computation, distributed computation, computer-human interaction, computer graphics, operating systems, numerical and symbolic computation, and computer security.

A professional computer scientist must have a firm foundation in the crucial areas of the field and will most likely have an in-depth knowledge in one or more of the other areas of the discipline, depending on the person's particular area of practice. Thus, a well-educated computer scientist should be able to apply the fundamental concepts and techniques of computation, algorithms, and computer design to a specific design problem. The work includes detailing of specifications, analysis of the problem, and providing a design that functions as desired, is reliable and maintainable, and meets desired cost criteria. Clearly, the computer scientist must not only have sufficient training in the computer science areas to be able to accomplish such tasks, but must also have a firm understanding in areas of mathematics and science, as well as a broad education in liberal studies to provide a basis for understanding the societal implications of the work being performed.

Equal Opportunity

The degree programs of the college and the professions they represent actively seek out women and under-represented minorities. Opportunities are unlimited and an increasing number are entering the professions.

Preparation and Admission

A statement of undergraduate and graduate admission requirements is included in the admissions portion of this catalog. A student may be admitted with less than the requirements listed, but the deficiency must be made up before he or she can progress very far in a college engineering course of study.

Students who contemplate entering the College of Engineering with advanced standing from other institutions should complete as many of the freshman and sophomore requirements listed in the curricula as possible. Calculus, chemistry and physics and the various introductory engineering courses are prerequisites to many advanced courses, and their omission may delay graduation.

Students from out-of-state institutions who wish to transfer to a degree program offered by the College of Engineering are invited to apply. Those who's cumulative GPA is below 2.8 for all previous college-level courses,

including any courses taken at UI, may be admitted on approval of the College of Engineering Admissions Committee.

Admission to Classes

As a prerequisite to any upper-division course normally taken in the junior or senior year and offered by the College of Engineering, students in the College of Engineering must have completed selected courses from the required courses in chemistry, computer science, engineering, mathematics, and physics that are normally to be taken by them during their first two years, and must have attained a grade of C or better in each of those courses.

Scholarships and Awards

Many scholarships and awards are available to College of Engineering students and prospective students. See "Student Financial Aid Services (p. 77)" in the student service section.

Faculty

The faculty is the key to the quality of the engineering program. All faculty members in this college hold advanced engineering degrees and all but four hold the Ph.D. degree. Recognition in such publications as *Who's Who in America, Who's Who in the West, Who's Who in Engineering,* and *American Men and Women of Science* is common.

A distinguishing feature of the faculty is a blend of academic and practical experience. Many faculty members have extensive experience in practice that they bring into the classroom, preserving a balance between theoretical and practical aspects of engineering.

Facilities

The facilities of the College of Engineering are among the finest in the country. Work is centered in the two-block-square engineering complex, which includes the Allen S. Janssen Engineering Classroom Building, the J. E. Buchanan Laboratory, the Gauss-Johnson Engineering Laboratory, McClure Hall, and the Engineering/Physics Building. These facilities are supplemented by biological engineering laboratories at other locations on the campus. In total, more than 250,000 square feet of floor space is used by the College of Engineering. Laboratories include modern equipment for teaching and research in all areas of instruction with recent additions for computerized drafting, CAD/CAM, computerized VLSI design, and robotics. Some of the equipment is of advanced design found in only a few institutional laboratories. Students also have access to over 20 general purpose open-access computer laboratories across the campus, with over 600 computers. There are over 100 software applications available, as well as the web, email, and other network services. An assortment of desk-top minicomputers and engineering work stations are available within the engineering complex. Wireless access is available in all of the engineering buildings.

Standing and Advantages

With a tradition of excellence dating from the founding of the University of Idaho, the College of Engineering has developed and maintained engineering degree programs on the Moscow campus that are noted for quality. For over 40 years, graduate programs in several disciplines have been available at off-campus sites as well. Since 1896, when it granted its first degrees, graduates of the college have spread throughout the world. The large number of firms and agencies throughout the country that send interviewers to the campus each year seeking to hire Idaho engineering graduates attest to the reputation of the university's engineering program.

The size of the college is near the median of engineering colleges in the country. While it is not so large that the importance of the student as an individual is lost, it is large enough to support the faculty and facilities needed for top quality education.

Attention is given to both undergraduate and graduate programs. New concepts and knowledge resulting from the graduate program feed into the undergraduate program to keep it up to date. Undergraduate students have an opportunity to observe and/or contribute effort to graduate research projects to help them determine their interest in graduate work.

Engineering Experiment Station

The function of the Engineering Experiment Station is to encourage and coordinate the College of Engineering's research and extension programs that are integral parts of the college's academic and service efforts.

The research program in engineering is conducted by the faculty, staff, and students of the college. There is neither a separate research facility nor a separate research staff. The College of Engineering requires that any research it undertakes have academic significance. A large part of the college's research program deals with developing new knowledge that is applicable to Idaho's economy or devising new methods or applications for using existing knowledge to the benefit of the state of Idaho. Most of the funds in support of research come from sources other than legislative appropriations. These funds are the result of research contracts and grants with various local, state, and federal agencies and private industry. Information regarding research capabilities is available upon request.

Believing that education is a never-ending need of mankind, the College of Engineering, through the means of short courses, workshops, seminars and forums, and pertinent publications, attempts to ascertain and meet the specific continuing education needs of Idaho's graduate engineers, computer scientists, and the technical community. Staff members also endeavor to provide information to the entire population of Idaho that may contribute to the successful solving of societal problems.

Off-Campus Programs

To fulfill its charge to provide engineering education to the people of Idaho, the College of Engineering provides several degree programs off campus. Graduate degrees in most disciplines are available through the Resident Instructional Centers at Boise, Idaho Falls, and Coeur d'Alene, using a combination of resident faculty, real-time video, and web-supported DVD courses. The Engineering Outreach program uses a variety of technologies to provide graduate and advanced undergraduate course work, including some complete master's degrees, at any location. For more information, see "Resident Instructional Centers."

General College Requirements for Graduation

University Requirements. See regulation J (p. 91) for requirements that all students in the university must meet.

College Requirements. The minimum credit requirement for university curricula is 120 credits for an undergraduate degree. Some engineering curricula require a greater number of credits.

Note: In calculating the credit total for each degree, the College of Engineering does not include credits that a student may have been required to earn in ENGL 101 , MATH 143 , and any courses taken to remove deficiencies.

Courses of Study and Degrees

The College of Engineering includes the degree-granting Departments of Biological Engineering, Chemical and Materials Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical Engineering, and the Department of Computer Science. Careful attention is given to curriculum content and educational philosophy to keep all programs attuned to rapidly changing technology.

Programs in the college lead to the Bachelor of Science in the following disciplines: Biological Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Material Science and Engineering, Mechanical Engineering, Computer Science, and Industrial Technology.

Most of the courses taken by freshmen and sophomores are the same in all curricula. The student may postpone a final decision on a branch of study for a year or more with little, if any, consequence, thus allowing ample opportunity for professional orientation. The junior and senior years are devoted to application of basic principles and design in the various fields of practice.

Courses of study leading to the degrees of Master of Science (M.S.), Master of Engineering (M.Engr.), and Doctor of Philosophy (Ph.D.) are offered in biological, chemical, civil, electrical, geological, and mechanical engineering. The M.S. and M.Engr. degrees are available in computer engineering and environmental engineering, and the M.S. and Ph.D. degrees are available in computer science. Master of Science degrees are available in geological engineering, material science and engineering, and technology management. The PhD degree is also available in Material Science and Engineering. The Master of Engineering in engineering management is also available. The M.S., M.Engr., and Ph.D. degrees in nuclear engineering are available at the Idaho Falls Center.

Major Curricula

The curriculum for each major is listed in the individual department section. Each curriculum provides for electives to be arranged in consultation with the student's advisor in accordance with the student's interest and consistent with current department and college policies. The electives are intended to provide flexibility in the student's program. Undesignated electives will usually be taken outside of the student's major field of study.

The following undergraduate programs in the College of Engineering are currently accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 - telephone: (410) 347-7700.: Biological Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Material Science and Engineering, and Mechanical Engineering. The computer science program is accredited by the Computing Accreditation Commission of ABET. Minors are offered in several programs but we do not pursue accreditation of minors.

Department of Biological Engineering

Ching-An Peng, Dept. Chair (421 Engineering/ Physics Bldg. 83844-0904; phone 208-885-7461; fax 208/885-7908; baengr@uidaho.edu; www.uidaho.edu/engr/academic-departments/be).

Biological engineers integrate engineering principles with biological systems to develop new technologies and solutions to address societal needs. For example, biological engineers improve environmental quality, engineer bacteria to produce value-added products, develop equipment to harvest and process food, and design/manufacture medical devices. Given the diversity of the biological engineering discipline, biological engineers find themselves working in a variety of fields including bioprocessing, bioenergy, environmental, food production, agricultural, pharmaceutical, and biomedical. This diverse expertise makes biological engineers exceptionally valuable in today's challenging world.

The **departmental mission** is teaching, research, and extension to produce sustainable solutions for engineering problems in agriculture, energy, environment, and medicine through application and integration of the biological, chemical and physical sciences. The educational objectives for the B.S. degree in Biological Engineering are:

1. Learn and Integrate: Graduates will be proficient engineering problem solvers capable of identifying, formulating, and solving engineering problems by applying their knowledge of mathematics, engineering, and appropriate bioprocessing, biomedical, biochemical, environmental, and agricultural topics.
2. Think and create: Graduates will be effective engineers who can apply their skills to design systems, components, and processes to solve engineering problems for an ever-changing world.
3. Communicate: Graduates will be effective written and verbal communicators, and productive team members.
4. Clarify purpose and perspective: Graduates will have a strong professional identity with a keen awareness of their professional and ethical responsibility, and practice lifelong learning.
5. Practice Citizenship: Graduates will design for advancement and sustainability of their local, national and global communities protecting human health and safety, and practicing environmental stewardship.

Upon graduation, students will be able to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Communicate effectively with a range of audiences.
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.

Courses in biology, chemistry, mathematics, and physics prepare students for more advanced courses in transport processes, bio-based products, bioenergy, biomedical engineering, bioprocessing, and sustainability. Much of our students' education takes place in labs:

explore water flow and quality and use in the water resources lab and the field, make discoveries about renewable energy in the advanced biofuel lab, design controls and instruments in the power lab, analyze medical images in the neurophysiology lab, and operate bioreactors in cell and tissue engineering lab.

The Biological Engineering curriculum is accredited by the Engineering Accreditation Commission of ABET 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, ph. 410-347-7700. Students in this program are eligible to take the Fundamentals of Engineering (FE) Examination prior to graduation and to become registered professional engineers after graduating and completing an experience requirement. Assessment of departmental objectives is accomplished by monitoring performance of students on the FE examination and by student interviews. All graduates are interviewed at the time of graduation by the department to evaluate concerns, opportunities, and effectiveness of its educational programs. The assessment statistics can be obtained from the departmental office.

The **graduate program** is offered in Biological Engineering with specialization in bio-based products, biofuels, biomaterials, bioprocessing, biotechnology, cell/tissue engineering, climate modeling, environmental impact assessment, gene/drug delivery, liquid plasma technology, nanotechnology, neural imaging, precision agriculture, waste water treatment, and water management. The graduate degrees offered in Biological Engineering are Master of Science (thesis), Master of Engineering (non-thesis) and Ph.D. Prospective students should have the equivalent of a B.S. degree in engineering and science.

Majors

- Biological Engineering (B.S.) (p. 203)

Biological Engineering Graduate Program

- Biological Engineering (M.Engr.) (p. 203)
- Biological Engineering (M.S.) (p. 203)
- Biological Engineering (Ph.D.) (p. 204)

Biological Engineering (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BE 142	Introduction to Biological Engineering	2
BE 242	Biological Engineering Analysis and Design	3
BE 441	Instrumentation and Measurements	3
BE 461	Bioprocess Engineering	3
BE 462	Electric Power and Controls	3
BE 478	Engineering Design I	3
BE 479	Engineering Design II	3
BE 491	Senior Seminar	1
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 380	Biochemistry I	4
CHEM 111	General Chemistry I [1, 2]	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
ENGR 105	Engineering Graphics	2
or GEOG 385	GIS Primer	
ENGR 210	Engineering Statics [1, 2]	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
ENGR 360	Engineering Economy	2
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III [1, 2]	3
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I [1, 2]	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
STAT 301	Probability and Statistics	3
Technical Electives		*17*
Select 9 credits from any 300 or 400 level Biological Engineering courses		
Select 8 credits from any 300 or 400 level engineering or sciences courses		
Total Hours		107

Courses to total 128 credits for this degree

1 A grade of C or better is required in each of the following courses before registration is permitted in upper-division engineering courses: BE 242, CHEM 111, ENGR 210, MATH 275, and PHYS 211.

2 To graduate in this program, a grade of C or better is required in each of the following courses: BE 242, CHEM 111, ENGR 210, MATH 275, and PHYS 211.

Students are required to submit a course plan and a statement of how the humanistic and social course requirements complement the technical content of the curriculum and are consistent with the program and institution objectives.

Biological Engineering (M.Engr.)

Master of Engineering. Major in Biological Engineering.

General M.Engr. requirements apply.

Biological Engineering (M.S.)

Master of Science. Major in Biological Engineering.

General M.S. requirements apply.

Biological Engineering (Ph.D.)

Doctor of Philosophy. Major in Biological Engineering.

Admission to this program is based on the student's interest being compatible with faculty interest, funds, and facilities. Admission is given only after a thorough review of the student's academic background, research interests, and potential. Individual programs normally consist of three years' work beyond the bachelor's degree. The department does not have a mandatory foreign language requirement. Students are required, however, to broaden their education in an area outside the normal engineering and science curricula. This can be done by taking courses in the humanities and social sciences, demonstrating an in-depth proficiency in a foreign language, or participating in an equivalent broadening educational experience.

Department of Chemical and Materials Engineering

D. Eric Aston, Dept. Chair (308 Buchanan Engr. Lab. 83844-1021; phone 208-885-7572).

Chemical Engineering Program

The Chemical Engineering Program is an ABET accredited program that combines the science of chemistry with the discipline of engineering in order to solve problems and to increase process efficiency. One of the most attractive aspects of a chemical engineering future is the variety of work available. The Chemical Engineering Program is a blend of physics, chemistry, and mathematics; thus, a chemical engineer possesses a versatility that gives him or her many opportunities for employment in fields such as energy systems, pulp and paper, environmental engineering, food products, nuclear power, petroleum and petrochemicals, semiconductors, synthetic fuels, radioisotope applications, plastics and polymers, pharmaceuticals, education, biomedical engineering, computer applications, alternate energy sources, steel, nano-technology and textiles. A chemical engineer can choose work in: research and development, design and construction, operations, management, teaching, or technical sales.

The mission of the Chemical Engineering Program is to provide quality educational programs firmly based in fundamental concepts and to perform and publish outstanding chemical engineering research. The goals of the Chemical Engineering Program are

1. to prepare students with a broad-based education grounded in chemical engineering fundamentals,
2. to maintain an environment that promotes effective student/faculty involvement in teaching, research, and mentoring,
3. to promote an active interaction with regional industries, and
4. to graduate students capable of independent life-long learning.

In addition, the educational objective of the Department of Chemical and Materials Engineering is to prepare students who

1. are well grounded in the fundamentals of chemical engineering,
2. can understand, analyze, and design efficient processes,
3. are proficient in the oral and written communication of their work and ideas,
4. are able to work in multidisciplinary teams in conjunction with their design, formulation of problems, and conducting of experiments,
5. understand the safety and environmental consequences of their work, and
6. are instilled with a sense of social responsibility, ethics, and a commitment to life-long learning.

Progress towards these goals and objectives is assessed by student performance on the nationally administered Fundamentals in Engineering Examination, performance at international design competitions, exit interviews with graduating students, and surveys of graduated students and their employers.

The faculty of the Chemical Engineering Program is dedicated to excellence in teaching. It is the faculty's goal to provide the students with a strong, well-rounded background for immediate entry into the industrial workforce or for graduate study. This background includes the theoretical aspects of chemical engineering as well as practical work experiences. Thus, much of the equipment that is installed in Chemical Engineering laboratories is on the scale of pilot plant equipment. Because much of the equipment is made of glass, students are able to see at a glance what processes occur and where the streams are flowing. The department has a two-story distillation column, a gas absorber, two-stage evaporator, two types of chemical reactors, a catalytic reactor, liquid extraction equipment, membrane-based gas separation, three scanning probe microscopes, three vibrational spectroscopy instruments, multiple gas chromatographs, process control labs, and supporting analytical equipment all used by undergraduate students. Proof that the program's goals are being achieved is in the job-placement statistics for chemical engineers from UI. Most receive job offers before graduation and many graduates now hold high-level technical and management positions in industry, government, and academia.

Students entering the graduate program in Chemical Engineering can work towards an M.S., M. Engr., or Ph.D. degree. The department has available a number of fellowships and assistantships for students, from industry and alumni, UI graduate assistantships, and externally-funded research assistantships. Entering graduate students must normally hold a B.S. in Chemical Engineering. The graduate program also includes provisions for study leading to an M.S. in Chemical Engineering for students who have a B.S. degree in a related field. Students will be required to register as undergraduates for as many semesters as needed to meet prerequisites to courses required for the M.S. (Ch.E.) degree.

Graduate studies in this program are highly diversified in order to accommodate the needs of most students who have a good basic background in the physical sciences, mathematics, and engineering. Areas of expertise include chemical reaction engineering, simulation, optimization and process design especially for energy systems, pulp and paper, food applications, hazardous waste characterization and bioremediation, membranes, nanoscience, fluid mechanics, biochemical engineering, and mass transfer. The graduate program in chemical engineering requires the GRE with scores of: Analytical >4.5, Quantitative >157 and Verbal >153, as well as a TOEFL score of at least 550 (paper based) or 79 (computer based).

Materials Science and Engineering Program

The educational objectives of the Materials Science and Engineering Program are to educate graduates who will

1. use their mathematics and science background to formulate and solve engineering problems,
2. remain current in modern technology and in tools of engineering practice,
3. demonstrate an understanding of current economic and societal issues associated with engineering projects and their impacts,
4. be able to communicate effectively with engineers and non-engineers while working independently or on teams to develop engineering solutions,
5. demonstrate an understanding of their professional and ethical responsibilities as engineers and uphold their responsibility to the public and occupational health and safety,
6. demonstrate the importance of life-long learning and continued professional growth.

Our Materials Science and Engineering Program is an ABET accredited program with an educational mission to produce graduates equipped to begin competitive and productive careers in their engineering professions; they define and solve materials science and engineering problems to meet desired needs and produce societal benefits; while understanding the importance of working responsibly, acting ethically and pursuing professional growth.

Although the program emphasizes economics and technology, engineering training also includes environmental, ethical, and safety concerns. As technological and engineering fields, these professional disciplines offer tremendous opportunities for the person who wishes to become involved in the application of materials science and engineering, often in sophisticated designs, to the preservation and enhancement of our society. The program provides technical training to prepare our graduates for productive and rewarding engineering careers.

Laboratory facilities for Materials Science and Engineering include: state-of-the-art magnetic, thin-film, electrical and optical materials characterization, semiconductor processes including thin-film sputtering and deposition, inductively-coupled plasma processing, electron cyclotron resonance plasma dry etching, mechanical alloying, vacuum arc furnaces, combustion synthesis, clean room, electron beam lithography, ion beam technology, electro-chemistry, computer chip and bio-chip design, micro-electromechanical systems (MEMS), nanomaterials, nano-devices and other modern technologies including optical, electron and atomic force microscopies, x-ray diffraction, differential scanning calorimetry and thermogravimetric analysis, etc. These laboratories provide an understanding of nanoscale technology, magnetic, electronic, bio-active, ceramic, polymeric, metallic and intermetallic materials.

Our faculty has proven their qualifications by their credentials in national and international professional societies. They are well known by their publications, research, and contract work. Most students find employment in the summer or on a cooperative basis, so that they can become more intimately involved in the disciplines that they are studying. Exposure to the department faculty members provides students with a one-to-one interaction and an expertise that enables them to be truly competitive when they enter the real world.

The program is designed to take advantage of the other excellent facilities of the university and other engineering disciplines. The program of study also includes involvement with practical aspects of professional practice by exposure to regional industries and research groups through field trips, guest speakers, study problems, and work time during the summer.

A minor in Materials Science and Engineering is offered that integrates with majors in chemical or mechanical engineering along with other engineering and science disciplines. This minor allows the graduate to combine expertise in materials with another technical discipline.

A minor in Metallurgical Engineering is offered that integrates with majors in either chemical or materials engineering, and allows the graduate to specialize in the minerals processing area of metal materials, fabrication, and research.

The program offers the Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) degrees in Materials Science and Engineering. These programs include a mix of theoretical and practical study most appropriate to each student. Studies include topics on nanotechnology, electronic materials, alternative energy materials (nuclear, solar, etc.), and advanced materials processing techniques, as well as traditional areas, such as corrosion, welding, powder metallurgy, etc. Some students prefer to work on applied problems presented by regional industry or research establishments, generally with funding from outside sources. Studies can be tailored to individual interests. The graduate program in MSE requires a TOEFL score of at least 550 (paper based) or 79 (computer based).

These advanced studies are financed by research grants, industry sponsors, or departmental funding. They are designed to train the individual in research methods and investigative procedures that will later enhance his or her ability in industrial or research environments or in teaching. The master's program involves both class work and research, the latter being designed to familiarize the student with research methods. In the doctoral program, the student is expected to break new ground and advance the field scientifically and to maintain the competitive technological lead enjoyed in the U.S. for so many years. The master's program generally requires 12 to 24 months beyond the B.S. degree and the doctoral program entails at least three years beyond the B.S. degree.

Most students find employment in the summer or on a cooperative basis, so that they can become more intimately involved in the processes that they are studying. The total program enables the person to leave the university with confidence, either as a baccalaureate student or at the master's or doctoral level, with the capability of a truly competent professional. Materials and metallurgical engineers have a wide variety of career options. They range all the way from primary metals/ceramics/polymer production through advanced materials industries. There are opportunities in technological areas with names and processes not even dreamed of just a few decades ago: plasma extractive processing, ceramic powder synthesis, bio-corrosion, magnetic recording media, and electron microscopy. The materials produced are transformed into the products we use in our daily lives, such as our cars, home appliances, farm equipment, and electrical and electronic equipment. Everything we touch, with the exception of agricultural or forestry products, has had its origin as a mineral in the earth. Materials engineers and scientists develop new products to fit specific demands, such as materials to withstand high stress, high temperature environments, or the extreme cold, radiation and vacuum of outer space. Some of our graduates are also employed as engineering consultants or by government agencies.

Majors

- Chemical Engineering (B.S.Ch.E.) (p. 206)
- Materials Science and Engineering (B.S.M.S.E.) (p. 207)

Minors

- Materials Science and Engineering Minor (p. 208)
- Metallurgical Engineering Minor (p. 209)

Chemical and Materials Engineering Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Chemical and Materials Engineering. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Chemical Engineering (M.S.) (p. 207)
- Chemical Engineering (M.Engr.) (p. 207)
- Chemical Engineering (Ph.D.) (p. 207)
- Materials Science and Engineering (M.S.) (p. 208)
- Materials Science and Engineering (Ph.D.) (p. 208)
- Metallurgical Engineering (M.S.) (p. 209)
- Metallurgy (M.S.) (p. 209)
- Advanced Materials Technology Graduate Academic Certificate (p. 206)

Advanced Materials Technology Graduate Academic Certificate

Note: A grade of 'B' or higher is required in all course work for this academic certificate.

Code	Title	Hours
Select 12 credits from the following:		12
MSE 434	Fundamentals of Polymeric Materials	
MSE 456	Metallic Materials	
MSE 523	Corrosion	
MSE 527	Ceramic Materials	
MSE 538	Fundamentals of Nuclear Materials	
MSE 564	Materials Physics and Engineering	
Total Hours		12

Courses to total 12 credits for this certificate

Chemical Engineering (B.S.Ch.E.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
CHE 110	Introduction to Chemical Engineering	1
CHE 123	Computations in Chemical Engineering	2
CHE 210	Integrated Chemical Engineering Fundamentals	1
CHE 223	Material and Energy Balances	3
CHE 326	Chemical Engineering Thermodynamics	3
CHE 330	Separation Processes I	3
CHE 340	Transport and Rate Processes I	4
CHE 341	Transport and Rate Processes II	4
CHE 423	Reactor Kinetics and Design	3
CHE 433	Chemical Engineering Lab I	1
CHE 434	Chemical Engineering Lab II	1
CHE 444	Process Analysis and Control	3
CHE 445	Digital Process Control	3
CHE 453	Process Analysis & Design I	3
CHE 454	Process Analysis and Design II	3
CHE 491	Seminar	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
ENGR 210	Engineering Statics	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3
Select one Chemical or Material Science Engineering Technical Elective course numbered 390 or greater		3
Select one Computer Science Elective in a programming language		3
Select one Economics Elective		3
Select three Humanities and Social Science Elective courses:		9
Select one Communications Elective course		2
Select one Mathematics Elective numbered 300 or greater [1]		3
Select 6 credits of Technical Electives in Math, Science, or Engineering numbered 300 or greater [2]		6
Total Hours		121

1 Must be numbered 300 or greater, excluding any 398, 498, or 598 Internship.

2 Technical Electives in Math, Science, or Engineering: must be numbered 300 or greater.

Courses to total 128 credits for this degree, not counting ENGL 101 , any 398 (Internship), any 498 (Internship), any 598 (Internship), or mathematics courses numbered lower than MATH 170 , and other courses that might be required to remove deficiencies.

To be enrolled in upper-division CHE courses, a student majoring in chemical engineering must earn a grade of C or better in each of the following courses:

Code	Title	Hours
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5

CHE 223	Material and Energy Balances	3
ENGR 210	Engineering Statics	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
Total Hours		27

Students transferring CHE 223 or its equivalent from a university without an ABET accredited chemical engineering program must pass a test on the subject matter of this course before enrolling in upper-division CHE courses.

In addition, a passing grade is required in each of the following courses before enrolling in upper-division CHE courses:

Code	Title	Hours
CHE 123	Computations in Chemical Engineering	2
Computer Science Elective		3
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3
Total Hours		22

A student majoring in chemical engineering may not register for upper-division CHE courses after accumulating more than four grades of D or F in UI mathematics, science, or engineering courses. Included in this number are multiple repeats in a single class or single repeats in multiple classes. A warning will be issued in writing to students who have accumulated two grades of D or F used to satisfy curricular requirements.

A GPA in CHE designated courses of at least 2.0 is required to graduate

Courses to total 128 credits for this degree.

Chemical Engineering (M.Engr.)

Master of Engineering. Chemical Engineering major.

General M.Engr. requirements apply. All students entering the chemical engineering program must complete:

Code	Title	Hours
CHE 515	Transport Phenomena	3
CHE 529	Chemical Engineering Kinetics	3
CHE 541	Chemical Engineering Analysis I	3
Total Hours		9

Chemical Engineering (M.S.)

Master of Science. Major in Chemical Engineering.

Thesis only. General M.S. requirements apply. All students entering the Chemical Engineering program must complete:

Code	Title	Hours
CHE 515	Transport Phenomena	3
CHE 529	Chemical Engineering Kinetics	3
CHE 541	Chemical Engineering Analysis I	3
Total Hours		9

Chemical Engineering (Ph.D.)

Doctor of Philosophy. Major in Chemical Engineering.

While most students entering the graduate program possessing only the bachelor's degree will first earn the M.S., it is possible to bypass the M.S. and work directly toward the Ph.D. Students electing this option will be expected to critically analyze a current research area as part of their degree requirements. This will constitute their Ph.D. qualifying examination. For others, the oral M.S. thesis examination serves as the Ph.D. qualifying examination. A written research proposal modeled after those submitted to such agencies as the National Science Foundation is required as part of the requirements for the Ph.D.

Materials Science and Engineering (B.S.M.S.E.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and the following:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
ENGL 317	Technical Writing	3
ENGR 210	Engineering Statics	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MSE 101	Introduction to Metallurgy and Materials Science	2
MSE 201	Elements of Materials Science	3
MSE 308	Thermodynamics of Materials	3
MSE 313	Physical Metallurgy	3
MSE 313L	Physical Metallurgy Laboratory	1
MSE 340	Transport and Rate Processes I	4
MSE 412	Mechanical Behavior of Materials	3
MSE 413	Phase Transformation and Kinetics	3
MSE 417	Instrumental Analysis	3
MSE 423	Corrosion	3
MSE 427	Ceramics Materials	3
MSE 432	Fundamentals of Thin Film Fabrication	3

MSE 434	Fundamentals of Polymeric Materials	3
MSE 453	Process Analysis & Design I	3
MSE 454	Process Analysis & Design II	3
MSE 456	Metallic Materials	3
MSE 464	Materials Physics and Engineering	3
PHIL 103	Introduction to Ethics	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
STAT 301	Probability and Statistics	3
Select one Chemical/Analysis Elective:		3
CHE 223	Material and Energy Balances	
CHEM 275	Carbon Compounds	
CHEM 277	Organic Chemistry I	
CHEM 306	Physical Chemistry II	
ENGR 428	Numerical Methods	
Select one Economics Elective		3
Select two Humanities and Social Science Electives		6
Select one MSE or CHE Technical Elective number 300 or greater		3
Select one Upper-Division Technical Elective in math, science or engineering [1]		3
Total Hours		123

[1] *Must be numbered 300 or greater, excluding any 398, 498, or 598 Internship.*

Courses to total 127 credits for this degree, not counting ENGL 101 , any 398 (Internship), any 498 (Internship), any 598 (Internship), or mathematics courses numbered lower than MATH 170 , and other courses that might be required to remove deficiencies.

To be enrolled in upper-division MSE courses, a student majoring in materials science and engineering must earn a grade of C or better in each of the following courses:

Code	Title	Hours
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
ENGR 210	Engineering Statics	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MSE 201	Elements of Materials Science	3
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3

In addition, a passing grade is required in each of the following courses before enrolling in upper-division MSE courses:

Code	Title	Hours
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MSE 101	Introduction to Metallurgy and Materials Science	2

A student majoring in materials science and engineering may not register for upper-division MSE courses after accumulating more than four grades of D or F in UI mathematics, science, or engineering courses. Included in this number are multiple repeats in a single class or single repeats in multiple classes. A warning will be issued in writing to students who have accumulated two grades of D or F used to satisfy curricular requirements.

A GPA in MSE designated courses of at least 2.0 is required to graduate.

Materials Science and Engineering (M.S.)

Master of Science. Major in Materials Science and Engineering.

Thesis and Non-thesis options are available. General M.S. requirements apply.

Materials Science and Engineering (Ph.D.)

Doctor of Philosophy. Major in Materials Science and Engineering.

While most students entering the graduate program possessing only the bachelor's degree will first earn the M.S., it is possible to bypass the M.S. and work directly toward the Ph.D. Students electing this option will be expected to critically analyze a current research area as part of their degree requirements. This will constitute their Ph.D. qualifying examination. For others, the oral M.S. thesis examination serves as the Ph.D. qualifying examination. A written research proposal modeled after those submitted to such agencies as the National Science Foundation is required as part of the requirements for the Ph.D.

Materials Science and Engineering Minor

Note: If completing both the Materials Science and Engineering major or minor and the Metallurgical Engineering minor, students must have 6 unique credits towards each minor.

Code	Title	Hours
MSE 201	Elements of Materials Science	3
Select 17 credits from the following courses:		17
ENGR 350	Engineering Mechanics of Materials	
MSE 313	Physical Metallurgy	
MSE 340	Transport and Rate Processes I	
MSE 412	Mechanical Behavior of Materials	
MSE 423	Corrosion	
MSE 427	Ceramics Materials	
MSE 432	Fundamentals of Thin Film Fabrication	
MSE 434	Fundamentals of Polymeric Materials	
MSE 438	Fundamentals of Nuclear Materials	
MSE 456	Metallic Materials	

MSE 464	Materials Physics and Engineering	
PHYS 212	Engineering Physics II	
PHYS 212L	Laboratory Physics II	
Total Hours		20

Courses to total 20 credits for this minor

Metallurgical Engineering (M.S.)

Master of Science. Major in Metallurgical Engineering.

Thesis and non-thesis options are available. General M.S. requirements apply.

Metallurgical Engineering Minor

Code	Title	Hours
MSE 201	Elements of Materials Science	3
MSE 313	Physical Metallurgy	3
MSE 456	Metallic Materials	3
Select 6 credits from the following:		6
ENGR 350	Engineering Mechanics of Materials	
MSE 308	Thermodynamics of Materials	
MSE 340	Transport and Rate Processes I	
MSE 423	Corrosion	
MSE 438	Fundamentals of Nuclear Materials	
PHYS 212	Engineering Physics II	
MSE Electives to total 22 credits		7
Total Hours		22

Courses to total 22 credits for this minor

Metallurgy (M.S.)

Master of Science. Major in Metallurgy.

Thesis Only. General M.S. requirements apply.

Department of Civil and Environmental Engineering

Patricia J. S. Colberg, Department Chair (104 Buchanan Engineering Laboratory 83844-1022; phone 208-885-5041).

Civil engineers apply scientific principles to the **design society's infrastructure**. The pyramids of Egypt, the irrigation systems that supported agriculture in ancient Babylonia and Assyria, the roads that linked the Roman Empire, and the railroads, bridges and barge canals of the early United States were all civil engineering projects that served the people of their times. Today's civil engineers are still involved in **designing the infrastructure** necessary for modern society to function. A civil engineer may be involved in the design and construction of highways, bridges, buildings, water conveyance systems, water reuse facilities, wastewater treatment plants, dams, and airports. Civil engineers may also be involved in planning for traffic controls, flood plain management, remediation of contaminated groundwater, and water and air quality management. Graduates of civil engineering programs may work in engineering consulting firms, in government agencies at the local/state/federal level, for non-governmental organizations (NGOs), or with construction contractors.

Environmental sensitivity and **sustainable development** are emerging as the tenets for continued survival on our planet. Civil engineers develop innovative solutions to ensure wise stewardship of our limited natural resources. Students who enter civil engineering can anticipate a very challenging and rewarding career.

Lower-division courses in civil engineering consist of basic courses in science, mathematics, and engineering required of most students within the College of Engineering. Course work in the junior year provides students with a broad background in all of the civil engineering subdisciplines, while technical electives in the senior year allow some specialization. For civil engineering students interested in geology, there is an option to complete a minor in Geological and Mining Engineering.

The Department of Civil and Environmental Engineering occupies the first floor of the Buchanan Engineering Laboratory Building with some additional office and laboratory spaces in the basement and on the second floor of the building.

The Department offers five graduate degree programs:

1. Master of Science in Civil Engineering (30 credits, with thesis),
2. Master of Engineering in Civil Engineering (33 credits, non-thesis),
3. Master of Science in Geological Engineering (30 credits, with thesis),
4. Master of Science in Geological Engineering (30 credits, non-thesis)
5. Doctor of Philosophy in Civil Engineering

Course work requirements in each of these graduate degree programs are relatively flexible depending on student interest and course availability. Financial assistance is available on a competitive basis in the form of teaching and research assistantships, but to thesis and dissertation students only. Applicants to all graduate programs must meet all university admission requirements. Applicants to graduate study in civil engineering should hold degrees in civil engineering or in another engineering discipline. Exceptions are made only if deficiency courses are taken before admission (see department website for details). Students with a background in geology or hydrology are welcome to apply to the graduate program in geological engineering, but must take any deficiency courses before admission. We do not currently require the GRE.

The **mission** of the Department of Civil and Environmental Engineering is to provide a high quality education at both the undergraduate and graduate levels. Upon completion of the University of Idaho's bachelor's degree in civil engineering, we expect our graduates to be:

1. competent in the fundamentals of engineering,
2. able to analyze, design and communicate civil and environmental engineering systems and processes
3. aware of the social, economic and environmental implications of engineered projects, and
4. responsible, ethical, and committed to life-long learning.

The Bachelor of Science (B.S.) degree program in civil engineering at the University of Idaho is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Majors

- Civil Engineering (B.S.C.E.) (p. 210)

Minors

- Geological and Mining Engineering Minor (p. 212)

Civil and Environmental Engineering Graduate Program

Graduate study is offered with specialization in the following subdisciplines of civil engineering: hydraulics and hydrologic engineering, ecohydrology (in Boise only), environmental engineering, structural engineering, geotechnical engineering, highway and pavement materials, and transportation engineering.

- Civil Engineering (M.S.) (p. 211)
- Civil Engineering (M.Engr.) (p. 210)
- Civil Engineering (Ph.D.) (p. 211)
- Geological Engineering (M.S.) (p. 211)

Civil Engineering (B.S.C.E.)

To graduate in this program, a minimum grade of C must be earned in all engineering, mathematics, and science courses used to satisfy the curriculum.

Any student majoring in civil engineering may accumulate no more than 14 credits of D or F in mathematics, science, technical elective or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single class or single repeats in multiple classes and courses transferred from other institutions. A warning will be issued in writing to students who have accumulated 7 credits of D or F in mathematics, science, technical elective, or engineering classes used to satisfy curricular requirements.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
CE 115	Introduction to Civil Engineering	1
CE 211	Engineering Surveying	3
CE 215	Civil Engineering Analysis and Design	3
CE 322	Hydraulics	4
CE 325	Fundamentals of Hydrologic Engineering	3
CE 330	Fundamentals of Environmental Engineering	3
CE 342	Theory of Structures	3
CE 357	Properties of Construction Materials	4
CE 360	Fundamentals of Geotechnical Engineering	4
CE 372	Fundamentals of Transportation Engineering	3
CE 491	Civil Engineering Professional Seminar	1
CE 494	Senior Design Project	3
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 317	Technical Writing	3
ENGR 105	Engineering Graphics	2
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
ENGR 360	Engineering Economy	2
GEOL 111	Physical Geology for Science Majors	3
GEOL 111L	Physical Geology for Science Majors Lab	1
or GEOL 101L	Physical Geology Lab	
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHIL 103	Introduction to Ethics	3
or AMST 301	Studies in American Culture	
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
STAT 301	Probability and Statistics	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one of the following:		3-4
BIOL 114	Organisms and Environments	
BIOL 115	Cells & the Evolution of Life	
BIOL/EPPN 154	Introductory Microbiology	
CHEM 112	General Chemistry II	
PHYS 212	Engineering Physics II	
PHYS 213	Engineering Physics III	
MATH 330	Linear Algebra	
STAT 431	Statistical Analysis	
Civil and Environmental Engineering Electives		
A total of 18 credits are required from:		18
CE-prefix 400-level courses [1]		
GEOE-prefix 400-level courses [2]		
Total Hours		110-112

[1] Except CE 400, CE 403, CE 411, CE 491, CE 494, CE 498, and CE 499.

[2] Except GEOE 403 and GEOE 499.

Courses to total at least 123 credits for this degree, not counting Math below 170, English below 102, and any classes needed to remove deficiencies.

Civil Engineering (M.Engr.)

Master of Engineering. Major in Civil Engineering.

A thesis is not required for the Master of Engineering degree.

Course requirements in the M.Eng. degree program are relatively flexible depending on student interest and course availability. This degree may be completed on a part-time basis and entirely online. Students in this degree program are not eligible to receive graduate assistantships.

Graduate study is offered with specialization in structures, highway and pavement materials, soil mechanics, transportation, hydraulics and water resources, geological engineering and environmental engineering.

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have a B.S. degree in civil

engineering; however, those with B.S. degrees in other areas (e.g., other areas of engineering, mathematics, physics) are also eligible for admission.

Graduate degree applicants not holding B.S. degrees in civil engineering are required to show evidence of completing the following undergraduate coursework: mathematics through differential equations, and one semester each of chemistry, calculus-based physics and engineering statics. Once admitted, additional preparatory coursework will be determined by the student's advisory committee and/or as prerequisites to courses listed in the student's study plan.

Candidates for graduate study must fulfill the requirements of the College of Graduate Studies and of the Department of Civil & Environmental Engineering. A minimum of 33 credits is required for the Master of Engineering degree. A thesis is not required, but M.Engr. degree candidates are required to demonstrate the ability to write a technical paper or report.

Civil Engineering (M.S.)

Master of Science. Major in Civil Engineering.

An approved thesis is required for Master of Science degree.

Course requirements in this degree program are relatively flexible depending on student interest and course availability. Financial assistance is available on a competitive basis in the form of instructional or graduate research assistantships. Areas of specialty include the following:

- Environmental Engineering
- Geotechnical Engineering
- Hydraulics and Water Resources Engineering
- Ecohydraulics (in Boise only)
- Structural Engineering
- Transportation Engineering
- Highway and Pavement Materials

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have a B.S. degree in civil engineering; however, those with B.S. degrees in other areas (e.g., other areas of engineering, mathematics, physics) are also eligible for admission.

Graduate degree applicants not holding B.S. degrees in civil engineering are required to show evidence of completing the following undergraduate coursework: mathematics through differential equations, and one semester each of chemistry, calculus-based physics and engineering statics. Once admitted, additional preparatory coursework will be determined by the student's advisory committee and/or as prerequisites to courses listed in the student's study plan. An approved thesis is required for Master of Science degree.

Civil Engineering (Ph.D)

Doctor of Philosophy. Major in Civil Engineering.

Persons interested in pursuing a doctoral degree should contact faculty members with whom they wish to work before admission to the College of Graduate Studies. We accept only those students for the Ph.D. degree to whom we can offer financial support. Programs are offered with specialization in the following general areas:

- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation and Materials Engineering
- Water Resources, Hydrology and Hydraulics
- Ecohydraulics (in Boise)

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have B.S. and/or M.S. degrees in civil engineering or a closely related field.

The qualifying examination is written and/or oral, and the preliminary examination is written and oral. Candidates must fulfill both the requirements of the College of Graduate Studies and of the Department of Civil & Environmental Engineering. See the College of Graduate Studies (p. 232) section of the U of I Catalog for the General Requirements applicable to each degree.

Course work requirements are relatively flexible depending on student interest, previous training and course availability. Financial assistance is available on a competitive basis in the form of graduate research assistantships. Students interested in graduate studies should select a specialty area in which they wish to study. Entrance requirements for the College of Graduate Studies apply. Foreign students must have a TOEFL score of at least 550 for admission to any departmental graduate degree program. We do not require the GRE. Conditional admission for Ph.D. applicants is not recommended.

For more information about civil and environmental engineering graduate studies, send requests to cee@uidaho.edu.

Geological Engineering (M.S.)

Master of Science. Major in Geological Engineering.

Geological Engineering is the professional discipline that relies on the use of geologic conditions and implications for:

1. the design and construction of civil and mining projects,
2. the evaluation and mitigation of natural and human-caused geologic hazards, and
3. the exploration and development of mineral and energy resources.

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have a B.S. degree in civil engineering or geology; however, those with B.S. degrees in other areas (e.g., other areas of engineering, mathematics, physics) are also eligible for admission.

Graduate students enrolled in this program take a combination of courses in such areas as geological engineering, civil engineering (soil mechanics), hydrogeology, and site characterization. The degree requires a minimum of 30 semester credits beyond the baccalaureate degree. Of those 30 credits, at least 18 must be from 500-level graduate courses. The degree program is available with a thesis option and a non-thesis option. The thesis option requires 6 credits of thesis work approved by faculty who serve on the student's graduate committee. The non-thesis option is available to students who have at least two years of

professional experience; this program requires a 3-credit directed study research paper and a final oral examination.

The following courses are considered to be the minimum preparation necessary for admission to the Geological Engineering Master of Science degree program. Students who do not have an adequate background in these subject areas will be required to satisfactorily complete those in which they are deficient. The actual course content of the program will depend on the student's background and career objectives. Each program is tailored to the individual student.

Required Deficiency Courses:

- Engr 210 Engineering Statics
- Engr 220 Engineering Dynamics
- Engr 335 Engineering Fluid Mechanics
- Engr 350 Engineering Mechanics of Materials
- Geol 345 Structural Geology
- Mathematics through Differential Equations

For additional information regarding the graduate program in Geological Engineering, contact the GeoE Program Director.

Geological and Mining Engineering Minor

Code	Title	Hours
CE 325	Fundamentals of Hydrologic Engineering	3
ENGR 220	Engineering Dynamics	3
GEOE 407	Rock Mechanics	3
GEOE 465	Excavation and Materials Handling	3
Choose 3 elective courses from the following:		*7-12*
CE 360	Fundamentals of Geotechnical Engineering	
CE 330	Fundamentals of Environmental Engineering	
CE 421	Engineering Hydrology	
CE 460	Geotechnical Engineering Design	
GEOE 428	Geostatistics	
GEOL 111	Physical Geology for Science Majors	
GEOL 111L	Physical Geology for Science Majors Lab	
GEOL 309	Ground Water Hydrology	
GEOL 335	Geomorphology	
GEOL 344	Earthquakes and Seismic Hazards	
GEOL 345	Structural Geology	
GEOL 361	Geology and the Environment	
GEOL 410	Techniques of Groundwater Study	
GEOL 422	Principles of Geophysics	
HYDR 409	Quantitative Hydrogeology	
HYDR 412	Environmental Hydrogeology	
Total Hours		19-24

Courses to total 21 credits for this minor

Department of Computer Science

Terry Soule, Dept. Chair (237 Janssen Engr. Bldg. 83844-1010; phone 208-885-6509; chair@cs.uidaho.edu; www.cs.uidaho.edu).

Computer science is the systematic study of algorithmic processes that describe and transform information: their theory, analysis, design, efficiency, implementation, and application. It is a broad discipline with an ever-growing array of opportunities. Graduates in this field can find employment in a wide spectrum of public and private enterprises.

The field of computer science encompasses many areas of specialization. One may find a personal niche in software development, systems development and hardware selection, studies of compatibility between hardware and software, programming language development and modification, information assurance, bioinformatics or perhaps a combination of these and any number of other diverse computer-oriented applications and concepts. Because of this diversity in potential application areas, the computer scientist must be familiar with the language of the physical or biological sciences, mathematics, and English. If the computer is to extend its role as a benefit to mankind, the computer scientist must be broadly educated and conversant with the many implications of the powerful tool that he or she is controlling and developing.

The Department of Computer Science was formed in 1981 and is in the College of Engineering (p. 200). The Bachelor of Science in Computer Science has been offered at UI since 1977. This program consists of a carefully designed computer science core, surrounded by an extensive array of challenging technical elective courses. The core consists of courses in algorithms and data structures, programming languages, computer architecture, operating systems, software engineering, theory of computation, and a senior capstone design experience. All of these courses have important components of theory, abstraction, and design.

The Bachelor of Science program in computer science is accredited by the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET) 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone: 410-347-7700.. The department has made substantial contributions to achieving the University's designation by the US Department of Homeland Security, as a National Center of Excellence in Information Assurance Education.

The department offers graduate programs leading to the degrees, Master of Science and Doctor of Philosophy. These programs combine a core of advanced work with a complement of elective courses selected to provide a focused plan of study.

Students in computer science have the unique opportunity to draw from the expertise of an outstanding faculty with extensive experience in industry, teaching, and research. Computers currently available to students include an extensive department network of UNIX, Linux, and Windows-based workstations and several campus personal computer laboratories for research focus. All major campus and department computer systems are networked together with Internet connections, providing a state-of-the-art computing environment. The department was instrumental in establishing the Center for Secure and Dependable Systems (CSDS) and the Initiative for Bioinformatics and Evolutionary Studies (IBEST). The importance of these labs can be seen from the range of private and government funding which supports the department's research in computer security, computer reliability, bioinformatics, evolutionary computation and high performance computing.

Majors

- Computer Science (B.S.C.S.) (p. 213)

Minors

- Computer Science Minor (p. 215)

Certificates

- Cybersecurity Undergraduate Academic Certificate (p. 215)

Computer Science Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Computer Science. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Secure and Dependable Computer Systems Graduate Academic Certificate (p. 215)
- Computer Science (M.S.) (p. 213)
- Computer Science (Ph.D.) (p. 214)

Computer Science (B.S.C.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
ENGL 317	Technical Writing	3
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
CS 360	Database Systems	3
CS 383	Software Engineering	3
CS 385	Theory of Computation	3
CS 395	Analysis of Algorithms	3
CS 401	Contemporary Issues in Computer Science	1
CS 445	Compiler Design	4
CS 480	CS Senior Capstone Design I	3
CS 481	CS Senior Capstone Design II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3
Natural Science with Lab for Science and Engineering Majors from two different disciplines		
Complete two courses including their accompanying labs from the following list:		8
BIOL 114	Organisms and Environments	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
ENVS 101 & ENVS 102	Introduction to Environmental Science and Field Activities in Environmental Sciences	
GEOG 100 & 100L	Physical Geography and Physical Geography Lab	
GEOL 102 & 102L	Historical Geology and Historical Geology Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Upper-division Computer Science courses		*12*
Except CS 398, CS 400, CS 401, CS 431, CS 499		
Total Hours		84

Courses to total 120 credits for this degree, not counting ENGL 101 , MATH 143**, and other courses that might be required to remove deficiencies. A minimum grade of 'C' is required in the following courses in order to graduate:**

Code	Title	Hours
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
MATH 170	Calculus I	4
MATH 176	Discrete Mathematics	3
MATH 175	Calculus II	4

Students majoring in computer science must earn a grade of C or better in CS 120, CS 121, and CS 150 and a C or better in MATH 176 before registration is permitted in 200 level CS courses. Students majoring in computer science must earn a grade of C or better in CS 210, CS 240, CS 270, and MATH 170 and MATH 175 before registration is permitted in upper-division CS courses.

Students must consult with their advisors when selecting electives within the curriculum to insure that their career objectives are met.

Computer Science (M.S.)

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Computer Science. See the College of Graduate Studies section for the general requirements applicable to each degree. No 300-level course that is required in the B.S.C.S. curriculum may be used to satisfy the requirements of the graduate degree.

A graduate degree in computer science from UI prepares a student for a lifetime of discovery. It enables the graduate to advance the state of the art in computing, not merely to keep up with it. The graduate program develops the student's critical thinking, investigatory, and expository skills. The student will learn the foundations of computer science theory and application, and the interaction between the two. By understanding the extent and limitation of current knowledge in computer science, the graduate will learn to understand what issues are important and why. He or she will acquire the methodological skills to resolve important open problems and tackle challenging new projects. The student will learn to present problems and solutions, both orally and in writing. For examples of active research areas please visit the department's website www.cs.uidaho.edu.

The study of computer science at the graduate level requires mathematical maturity, skill in the use of high-level and machine-level

programming languages, and basic knowledge of computer hardware. Admission to this program is highly competitive. An undergraduate degree in Computer Science is not a requirement. Students with a bachelor's degree from other closely allied undergraduate programs will be considered. Students who wish to enter the graduate program must ultimately demonstrate competence in specific areas equivalent to the material covered in several of the undergraduate computer science core courses. We expect at least a 3.0 undergraduate GPA, but take into account other student achievements. International students for whom English is a second language must have a TOEFL score of 550 or higher for the written test, 213 or higher for the computer based test, or 79 or higher for the internet-based test.

As a prerequisite to graduate program admission, competence in the following areas must be demonstrated: knowledge of a structured, high-level language; algorithms and data structures; and a full year of calculus.

If prerequisite requirements are met, a student who does not have an adequate coursework background in computer science may be admitted with deficiencies. He or she must then demonstrate knowledge of this material early on in their graduate studies by either taking the GRE Computer Science Subject Test and receiving a score in the 60^{th} percentile or higher or by completing those courses in which he or she is deficient. Deficiency areas for graduate work in computer science are: computer organization and architecture; computer languages; computer operating systems; software engineering; analysis of algorithms; and theory of computation. Credit for deficiency courses cannot be counted toward the total credits required for the graduate degree.

Master of Science. Major in Computer Science.

The following are requirements for receiving an M.S. degree in computer science from UI. There is both a thesis and a non-thesis option, though in both options the student must complete courses in the graduate CS core and in a focused plan of study. In both options, the student must successfully complete at least 18 credit hours of 500-level courses and at least 18 credit hours of CS courses.

A graduate degree represents mastery of the theory underlying one's discipline, a graduate breadth requirement. This is the foundation on which further study should be based.

The student must acquire depth in at least one major area by developing a focused plan of study in consultation with the major advisor. This should be a program that investigates some aspect of computer science in depth, consistent with the goals of the graduate program in computer science.

The thesis option requires at least 30 credit hours of study. Specific requirements are: graduate breadth requirement; at least one semester of CS Graduate Seminar, CS 501 (1 cr); and Master's Research and Thesis, CS 500 (at least 6 cr). The thesis must be in the approved format and must represent significant scholarly achievement. The thesis must be presented at a public colloquium.

The non-thesis option requires at least 30 credit hours of study, up to 6 credits of which can be CS 580. Specific requirements are: graduate breadth requirement and at least one semester of CS Graduate Seminar, CS 501 (1 cr). At the end of the program, non-thesis students must pass a comprehensive examination that covers their graduate studies.

Computer Science (Ph.D.)

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Computer Science. See the College of Graduate Studies section for the general requirements applicable to each degree. No 300-level course that is required in the B.S.C.S. curriculum may be used to satisfy the requirements of the graduate degree.

A graduate degree in computer science from UI prepares a student for a lifetime of discovery. It enables the graduate to advance the state of the art in computing, not merely to keep up with it. The graduate program develops the student's critical thinking, investigatory, and expository skills. The student will learn the foundations of computer science theory and application, and the interaction between the two. By understanding the extent and limitation of current knowledge in computer science, the graduate will learn to understand what issues are important and why. He or she will acquire the methodological skills to resolve important open problems and tackle challenging new projects. The student will learn to present problems and solutions, both orally and in writing. For examples of active research areas please visit the department's website www.cs.uidaho.edu.

The study of computer science at the graduate level requires mathematical maturity, skill in the use of high-level and machine-level programming languages, and basic knowledge of computer hardware. Admission to this program is highly competitive. An undergraduate degree in Computer Science is not a requirement. Students with a bachelor's degree from other closely allied undergraduate programs will be considered. Students who wish to enter the graduate program must ultimately demonstrate competence in specific areas equivalent to the material covered in several of the undergraduate computer science core courses. We expect at least a 3.0 undergraduate GPA, but take into account other student achievements. International students for whom English is a second language must have a TOEFL score of 550 or higher for the written test, 213 or higher for the computer based test, or 79 or higher for the internet-based test.

As a prerequisite to graduate program admission, competence in the following areas must be demonstrated: knowledge of a structured, high-level language; algorithms and data structures; and a full year of calculus.

If prerequisite requirements are met, a student who does not have an adequate coursework background in computer science may be admitted with deficiencies. He or she must then demonstrate knowledge of this material early on in their graduate studies by either taking the GRE Computer Science Subject Test and receiving a score in the 60^{th} percentile or higher or by completing those courses in which he or she is deficient. Deficiency areas for graduate work in computer science are: computer organization and architecture; computer languages; computer operating systems; software engineering; analysis of algorithms; and theory of computation. Credit for deficiency courses cannot be counted toward the total credits required for the graduate degree.

Doctor of Philosophy. Major in Computer Science.

The PhD degree represents a continuation in the mastery of the theory underlying computer science. A doctoral student develops a graduate program of at least 78 semester hours in consultation with his or her major professor and supervisory committee. The PhD graduate candidate must successfully complete the CS graduate breadth requirement.

As a part of the program the student is required to include at least two semesters of CS 501 (graduate seminar). The student must have at least one full semester of teaching experience, with the teaching assignment determined by the student's supervisory committee. There is no foreign language requirement. The student must satisfy the residency requirement by spending at least two terms at the Moscow campus or a UI Residence Center. The purpose of the residency requirement is to provide the student with access to facilities, faculty, and colleagues.

The qualifying examination is a written and/or oral examination, administered by the student's graduate committee, which covers fundamental areas of computer science. The preliminary examination is an examination of a student's proposed dissertation research, including both a written proposal and an oral public presentation covering related research, preliminary results, and a research plan. The student must produce a dissertation, presenting an original, significant contribution to computer science. The dissertation should be publishable, in whole or in part, and should demonstrate the ability of the candidate to successfully initiate and pursue a significant, original research project. A public presentation and defense of the final dissertation is required. It is expected that all PhD students will publish the results of their research before completion of their degree.

Computer Science Minor

Code	Title	Hours
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
MATH 176	Discrete Mathematics	3
Select 6 credits of Elective courses:		6
CS 210	Programming Languages	
CS 240	Computer Operating Systems	
CS 270	System Software	
Total Hours		19

Courses to total 19 credits for this minor

Cybersecurity Undergraduate Academic Certificate

A grade of 'C' or higher is required in all coursework for this academic certificate.

Code	Title	Hours
CS 150	Computer Organization and Architecture	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
CS 336	Introduction to Information Assurance	3
CS 438	Network Security	3
CS 439	Applied Security Concepts	3
CS 447	Computer and Network Forensics	3
Total Hours		21

Courses to total 21 credits for this certificate

Secure and Dependable Computing Systems Graduate Academic Certificate

Note: A grade of 'B' or higher is required in all coursework for this academic certificate.

Code	Title	Hours
CS 536	Advanced Information Assurance Concepts	3
CS 538	Network Security	3
CS 547	Computer and Network Forensics	3
Select 9 credits of Electives:		9
CS 504	Special Topics	
CS 539	Applied Security Concepts	
CS 544	Control and Crit Infra Systems	
or ECE 544	Supervisory Control and Critical Infrastructure Systems	
CS 548	Survivable Systems and Networks	
CS 549	Fault/Tolerant Systems	
ECE 569	Resilient Control of Critical Infrastructure	
Total Hours		18

Courses to total 18 credits for this certificate

Department of Electrical and Computer Engineering

Joseph (Joe) Law, Term Chair (214 Buchanan Engr. Lab. 83844-1023; phone 208-885-7263; www.ece.uidaho.edu).

The Department of Electrical and Computer Engineering offers degree programs in the closely related fields of electrical engineering and computer engineering. The electrical engineering program spans the subdisciplines of analog electronics, electric power, electromagnetics, computers, and communication and control systems. The computer engineering program focuses on the architecture, programming, and application of digital computers. Bachelor of Science, Master of Science, and Master of Engineering degrees are offered in both electrical engineering and computer engineering. The Doctor of Philosophy degree is offered in electrical engineering and encompasses research in both electrical and computer engineering.

Mission and Vision

The mission of the department is to educate students for the professional practice of electrical and computer engineering by offering undergraduate and graduate programs that encourage lifelong learning, foster teamwork and leadership, and promote creative discovery. The department is committed to maintaining the highest possible standards in teaching, scholarship, advising, and service. The vision of the department is to continue to expand its role in the state and region as a provider of outstanding undergraduate and graduate education programs in electrical and computer engineering.

Continuous Improvement

The department uses a continuous improvement process to attain the program educational objectives set forth below. Each of the broad objectives is associated with a number of specific student outcomes that

are measured by a variety of assessment tools. Programs are assessed annually to identify problems and initiate changes to ensure that program objectives are being met. Additional information about the assessment and continuous improvement process is available under the department web page.

The department is proud of its over 100-year history and its more than 2,500 alumni. Our graduates have become productive engineers and industrial and community leaders all over the nation and the world, and are actively recruited by major employers of electrical and computer engineers. Both the Electrical and Computer Engineering programs are accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, ph. 410-347-7700. Graduates of our program consistently score higher than the national average on the Fundamentals of Engineering examination administered by the National Council of Examiners for Engineering and Surveying.

The department offices and laboratories are located in the Buchanan Engineering Laboratory and the Gauss-Johnson Laboratory on the Moscow campus. Courses are also offered through branch campuses located in Boise, Idaho Falls, and Coeur d'Alene, and through the Engineering Outreach program.

Electrical Engineering Undergraduate Program

Electrical engineering involves the application of electrical phenomena for the benefit of society. Electrical engineers design and use circuits and systems for computers, instruments, communications devices, and power conversion equipment.

Program Educational Objectives

The program educational objectives of the electrical engineering program are to produce graduates who:

1. **Learn and Integrate.** Graduates of the program will demonstrate proficiency in identifying, formulating, and solving engineering problems by applying their knowledge and understanding of mathematics, science, and engineering.
2. **Think and Create.** Graduates of the program will demonstrate proficiency in designing analog and digital circuits and systems, power systems, control systems, or computing systems. They will demonstrate the capabilities of analyzing, designing, implementing, and verifying circuits, devices, and systems to meet specified requirements while considering real-world constraints.
3. **Communicate.** Graduates of the program will demonstrate an ability to communicate effectively through oral and written media to interdisciplinary groups, including team members, constituents, and the public.
4. **Clarify Purpose and Perspective.** They will engage in lifelong learning activities to further develop their technical and professional capabilities and skills.
5. **Practice Citizenship.** Graduates of the program demonstrate knowledge of professional and ethical responsibility. They will consider the societal impact of their work, and/or add value to the profession and to society through active engagement in professional societies, community services, and outreach to future generations of engineers.

Students in the electrical engineering program are assigned an advisor upon entry into the program. The advisor helps the student prepare appropriate class schedules each semester and provides guidance on other academic and professional issues. Students can take an electrical engineering course in their freshman year that introduces them to the field and helps prepare them for further study. Required courses in the freshman year help develop a solid foundation in physics, chemistry, mathematics, and writing. Foundation courses in science, mathematics, and engineering are continued in the sophomore year, including the first two courses in electrical circuits. The junior year exposes the student to a wide variety of electrical engineering courses to develop breadth in electrical engineering knowledge and skills. In the senior year, students specialize in specific areas of electrical engineering through the choice of technical electives. Students also take a two-semester sequence of design courses where students learn to design, test, and build an electrical engineering circuit or system. Additional courses in the humanities, social sciences, and English help prepare the graduate to become a well-rounded and productive member of society.

Computer Engineering Undergraduate Program

Computer engineering involves the application of the principles of electrical engineering and computer science for the benefit of society. Computer engineers design and use digital computers for instrumentation, control, communication, and power conversion systems.

Program Educational Objectives

The program educational objectives of the computer engineering program are to produce graduates who:

1. **Learn and Integrate.** Graduates of the program will demonstrate proficiency in identifying, formulating, and solving engineering problems by applying their knowledge and understanding of mathematics, science, and engineering.
2. **Think and Create.** Graduates of the program will demonstrate proficiency in analysis and design of hardware and software-based systems using modern methods and tools to meet specified requirements while considering real-world constraints.
3. **Communicate.** Graduates of the program will demonstrate an ability to communicate effectively through oral and written media to interdisciplinary groups, including team members, constituents, and the public.
4. **Clarify Purpose and Perspective.** They will engage in lifelong learning activities to further develop their technical and professional capabilities and skills.
5. **Practice Citizenship.** Graduates of the program demonstrate knowledge of professional and ethical responsibility. They will consider the societal impact of their work, and/or add value to the profession and to society through active engagement in professional societies, community services, and outreach to future generations of engineers.

Students in the computer engineering program are assigned an advisor upon entry into the program. The advisor helps the student prepare appropriate class schedules each semester and provides guidance on other academic and professional issues. In the freshman year, students take introductory courses in physics, mathematics, and computer science to help develop a solid foundation based on these fundamental areas. The sophomore year continues with more physics and mathematics, but also introduces the students to more advanced courses in computer science, computer engineering, and electrical circuits. The junior year provides breadth in several areas of electrical and computer engineering and computer science including electronics, signals and systems, microcontrollers, programming languages, and operating systems. The senior year allows the student to develop some depth of knowledge in selected areas through a variety of technical elective courses. In addition, the student takes a two-semester sequence of design courses where students learn to design, test, and build a computer engineering

system. Additional courses in the humanities, social sciences, English, and public speaking help prepare the graduate to become a well-rounded and productive member of society.

Note: In addition to college requirements for admission to classes (see "Admission to Classes (p. 200)*" under the College of Engineering* (p. 200) *section), students majoring in electrical engineering or computer engineering must earn a grade of C or better in certain lower division courses and a passing grade in ECE 292 as prerequisite to any upper-division course in electrical engineering or computer engineering. Advisor's approval is required for admission to all ECE courses.*

Majors

- Computer Engineering (B.S.Comp.E.) (p. 217)
- Electrical Engineering (B.S.E.E.) (p. 219)

Electrical and Computer Engineering Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Electrical and Computer Engineering. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Analog Integrated Circuit Design Graduate Academic Certificate (p. 217)
- Power System Protection and Relaying Graduate Academic Certificate (p. 223)
- Computer Engineering (M.S.) (p. 219)
- Computer Engineering (M.Engr.) (p. 218)
- Electrical Engineering (M.Engr.) (p. 221)
- Electrical Engineering (M.S.) (p. 222)
- Electrical Engineering (Ph.D.) (p. 223)

Analog Integrated Circuit Design Graduate Academic Certificate

Note: A grade of 'B' or higher is required in all coursework for this academic certificate.

Code	Title	Hours
ECE 515	Analog Integrated Circuit Design	3
ECE 517	Mixed Signal IC Design	3
ECE 565	Introduction to Microelectronics Fabrication	3
Select 3 credits from the following Electives:		3
ECE 410	Microelectronics II	
ECE 430	Microwave and Millimeter Wave Circuits	
ECE 445	Introduction to VLSI Design	
ECE 460	Semiconductor Devices	
ECE 513	Radio-Frequency IC Design	
ECE 518	Introduction to Electronic Packaging	
ECE 562	Semiconductor Theory	
Total Hours		12

Courses to total 12 credits for this certificate

Computer Engineering (B.S.Comp.E.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
COMM 101	Fundamentals of Oral Communication	2
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
ECE 101	Foundations of Electrical and Computer Engineering	2
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ECE 292	Sophomore Seminar	0
ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1
ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
ECE 440	Digital Systems Engineering	3
ECE 482	Computer Engineering Senior Design I	3
ECE 483	Computer Engineering Senior Design II	3
ECE 491	Senior Seminar	0
ENGL 317	Technical Writing	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
PHIL 103	Introduction to Ethics	3
or AMST 301	Studies in American Culture	
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
STAT 301	Probability and Statistics	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Technical Electives		

Select from upper-division computer engineering, electrical engineering, and computer science courses:	15
Total Hours	112-113

Courses to total 128 credits for this degree, not counting ENGL 101, MATH 143, and other courses that might be required to remove deficiencies.

Students majoring in computer engineering must earn a grade of P in ECE 292 and a grade of C or better in each of the following courses for graduation, and before registration is permitted in upper-division engineering courses:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CS 120	Computer Science I	4
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1

Students majoring in computer engineering must earn a grade of C or better in each of the following courses for graduation, and before registration is permitted in 200-level CS courses:

Code	Title	Hours
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
MATH 176	Discrete Mathematics	3

Students majoring in computer engineering must earn a grade of C or better in each of the following courses for graduation, and before registration is permitted in upper-division CS courses:

Code	Title	Hours
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3

Students majoring in computer engineering must meet the college requirements for admission to classes (see "Admission to Classes (p. 200)" under college of Engineering, part four).

Any student majoring in computer engineering may accumulate no more than five (5) letter grades of D's and F's in mathematics, science, or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single class or single repeats in multiple classes and courses transferred from other institutions. Specifically excluded are D or F grades from laboratory sections associated with courses.

Computer Engineering (M.Engr.)

The Computer Engineering Program offers both Master of Science and Master of Engineering degrees. Both degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of computer engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in computer engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version or 550 for the paper version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in computer engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

1. A bachelor's degree in electrical engineering, computer science, or another engineering discipline or in a science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of computer engineering emphasized in the undergraduate curriculum. Proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents[1]:

Code	Title	Hours
CS 240	Computer Operating Systems	3
ECE 240	Digital Logic	3
ECE 310	Microelectronics I	3
ECE 340	Microcontrollers	3
ECE 350	Signals and Systems I	3
ECE 440	Digital Systems Engineering	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra (does not count for the graduate credit)	3

[1] Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Engineering. Major in Computer Engineering.

To be approved, programs must satisfy both the university requirements governing the M.S. degree and must be enrolled in ECE 591, during each semester of on-campus enrollment.

Computer Engineering (M.S.)

The Computer Engineering Program offers both Master of Science and Master of Engineering degrees. Both degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of computer engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in computer engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version or 550 for the paper version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in computer engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

1. A bachelor's degree in electrical engineering, computer science, or another engineering discipline or in a science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of computer engineering emphasized in the undergraduate curriculum. Proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents[1]:

Code	Title	Hours
CS 240	Computer Operating Systems	3
ECE 240	Digital Logic	3
ECE 310	Microelectronics I	3
ECE 340	Microcontrollers	3
ECE 350	Signals and Systems I	3
ECE 440	Digital Systems Engineering	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra (does not count for the graduate credit)	3

[1] Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Science. Major in Computer Engineering.

To be approved, programs must satisfy both the university requirements governing the M.S. degree and must be enrolled in ECE 591, during each semester of on-campus enrollment.

Electrical Engineering (B.S.E.E.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CS 120	Computer Science I	4
ECE 101	Foundations of Electrical and Computer Engineering	2
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ECE 292	Sophomore Seminar	0
ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1
ECE 320	Energy Systems I	3
ECE 321	Energy Systems I Laboratory	1
ECE 330	Electromagnetic Theory	3
ECE 331	Electromagnetics Laboratory	1
ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
ECE 480	EE Senior Design I	3
ECE 481	EE Senior Design II	3
ECE 491	Senior Seminar	0
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 360	Engineering Economy	2
ENGL 317	Technical Writing	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
PHIL 103	Introduction to Ethics	3
or AMST 301	Studies in American Culture	
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
STAT 301	Probability and Statistics	3

Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one upper-division Engineering Science elective:		3
ENGR 320	Engineering Thermodynamics and Heat Transfer	
ENGR 335	Engineering Fluid Mechanics	
ENGR 350	Engineering Mechanics of Materials	
ENGR 428	Numerical Methods	
MATH 428	Numerical Methods	
PHYS 428	Numerical Methods	
Select 18 credits of Technical electives taken from upper-division Engineering, Math, Physics, Statistics, and Computer Science courses: [1]		18
ECE 410	Microelectronics II	
or ECE 418	Introduction to Electronic Packaging	
ECE 420	Energy Systems II	
ECE 430	Microwave and Millimeter Wave Circuits	
or ECE 432	Propagation of Wireless Signals	
or ECE 434	Antenna Principles and Design	
ECE 440	Digital Systems Engineering	
or ECE 443	Distributed Processing and Control Networks	
ECE 450	Signals and Systems II	
ECE 460	Semiconductor Devices	3
or ECE 465	Introduction to Microelectronics Fabrication	
Total Hours		117-118

[1] Students may request, after approval by their academic advisor and the Petition Committee, to use other upper division technical courses in the College of Science or in Engineering Management (EM) in partial fulfillment of this requirement. Of these eighteen credits a minimum of twelve credits must be selected from electrical engineering courses including at least nine credits from these courses.

Courses to total 128 credits for this degree, not counting ENGL 101 , MATH 143 , and other courses that might be required to remove deficiencies.

Students majoring in electrical engineering must earn a grade of P in ECE 292 and a grade of C or better in each of the following courses for graduation and before registration is permitted in upper-division electrical and computer engineering courses:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CS 120	Computer Science I	4
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240 & ECE 241	Digital Logic and Logic Circuit Lab	4
ENGR 210	Engineering Statics	3
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3

Students majoring in electrical engineering or computer engineering must meet the college requirements for admission to classes (see "Admission to Classes (p. 200)" under College of Engineering (p. 200), part four).

Any student majoring in electrical engineering may accumulate no more than five (5) letter grades of D's and F's in mathematics, science, or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single class or single repeats in multiple classes and courses transferred from other institutions. Specifically excluded are D or F grades from laboratory sections associated with courses.

Within the constraints on choice of technical electives noted above, students may choose sets of electives to develop proficiencies in certain areas of emphasis. Three such areas are currently available, one in communications, one in integrated circuit design, and one in power. The course requirements for each of these areas are described below.

Communications Emphasis

This emphasis prepares students for a variety of careers in the communications industry. Students should take a total of 18 credits from the following:

Code	Title	Hours
Core Courses		
Select 9 credits from the following:		9
ECE 410	Microelectronics II	
ECE 430	Microwave and Millimeter Wave Circuits	
ECE 450	Signals and Systems II	
Technical Electives		9
Select 9 credits from the following:		9
ECE 413	Radio-Frequency IC Design	
ECE 432	Propagation of Wireless Signals	
ECE 445	Introduction to VLSI Design	
ECE 452	Communication Systems	
ECE 455	Information and Coding Theory	
Total Hours		27

Microelectronics Emphasis

This emphasis prepares students for variety careers in the semiconductor industry. It includes courses in analog/RF and mixed-signal integrated circuit (IC) design, semiconductors, and IC packaging. Students should take a total of 18 credits from the following:

Code	Title	Hours
Required credits:		
ECE 410	Microelectronics II	3
ECE 460	Semiconductor Devices	3
Select 3 core credits from the following:		3
ECE 413	Radio-Frequency IC Design	
ECE 415	Analog Integrated Circuit Design	
ECE 418	Introduction to Electronic Packaging	
Select 3 credits from the following:		3
ECE 440	Digital Systems Engineering	

ECE 430	Microwave and Millimeter Wave Circuits	
ECE 450	Signals and Systems II	
ECE 465	Introduction to Microelectronics Fabrication	
Select 6 additional credits of technical electives from the following:		6
ECE 413	Radio-Frequency IC Design	
ECE 415	Analog Integrated Circuit Design	
ECE 417	Mixed Signal IC Design	
ECE 418	Introduction to Electronic Packaging	
ECE 419	Image Sensors and Systems	
ECE 445	Introduction to VLSI Design	
ECE 462	Semiconductor Theory	
ECE 465	Introduction to Microelectronics Fabrication	
Total Hours		18

Power Emphasis

This emphasis prepares students for a variety of careers with electric utilities, consulting firms, and with manufacturing and design firms. Students should take a total of 18 credits from the following:

Code	Title	Hours
ECE 420	Energy Systems II	3
ECE 422	Power Systems Analysis	3
ECE 427	Power Electronics	3
ECE 450	Signals and Systems II	3
Select 3 credits from the following:		3
ECE 410	Microelectronics II	
ECE 430	Microwave and Millimeter Wave Circuits	
ECE 440	Digital Systems Engineering	
Select 3 additional credits of technical electives:		3
Total Hours		18

Electrical Engineering (M.Engr.)

The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of electrical engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in electrical engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version, or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

1. A bachelor's degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents.[1]

Code	Title	Hours
Power Area [1]		
ECE 212	Electrical Circuits II	3
ECE 320	Energy Systems I	3
ECE 329	Background Study in Electrical Machines	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 420	Energy Systems II	3
Electromagnetics Area [1]		
ECE 212	Electrical Circuits II	3
ECE 330	Electromagnetic Theory	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 432	Propagation of Wireless Signals	3
ENGR 210	Engineering Statics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Microelectronics Area [1]		
ECE 212	Electrical Circuits II	3
ECE 310	Microelectronics I	3
ECE 319	Background Study in Electronics	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 410	Microelectronics II	3
Systems Area		
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3

[1] Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Engineering. Major in Electrical Engineering.

General M.Engr. requirements apply, except that the department requires at least 30 credits of course work. Students, with the assistance of their major professor, prepare their own program as soon as possible during their first semester, and submit it to the faculty for approval. To be approved, programs must satisfy both the university requirements governing the M.Engr. degree and the following department requirements:

1. At least 18 credits in electrical engineering courses numbered 500 or above.
2. At least three electrical engineering courses in a given area for depth, two of which must be numbered 500 or above.
3. At least one course in each of two areas (outside the areas selected under item 2) to provide breadth.
4. Enrollment in ECE 591, Electrical Engineering Research Colloquium, during each semester of on-campus enrollment.

Electrical Engineering (M.S.)

The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of electrical engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in electrical engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version, or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

1. A bachelor's degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents.

Code	Title	Hours
Power Area [1]		
ECE 212	Electrical Circuits II	3
ECE 320	Energy Systems I	3
ECE 329	Background Study in Electrical Machines	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 420	Energy Systems II	3
Electromagnetics Area [1]		
ECE 212	Electrical Circuits II	3
ECE 330	Electromagnetic Theory	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 432	Propagation of Wireless Signals	3
ENGR 210	Engineering Statics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Microelectronics Area [1]		
ECE 212	Electrical Circuits II	3
ECE 310	Microelectronics I	3
ECE 319	Background Study in Electronics	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 410	Microelectronics II	3
Systems Area		
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3

[1] Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Science. Major in Electrical Engineering.

General M.S. requirements apply, except that the department requires at least 24 credits of course work in addition to a thesis. The master's program may provide advanced preparation for professional practice, or it may serve as the first step in graduate study leading to the Ph.D. degree. Specific courses to be taken for the program are not prescribed by the faculty. Students, with the assistance of their major professor, prepare their own program as soon as possible during their first semester, and submit it to the faculty for approval.

1. At least 18 credits in electrical engineering courses numbered 500 or above.
2. Two or more electrical engineering courses numbered above 500 in a given area for depth.
3. At least one course in each of two areas (outside the areas selected under item 2) to provide breadth.

4. Enrollment in ECE 591, during each semester of on-campus enrollment.

Electrical Engineering (Ph.D.)

The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of electrical engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in electrical engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version, or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

1. A bachelor's degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents.

Code	Title	Hours
Power Area [1]		
ECE 212	Electrical Circuits II	3
ECE 320	Energy Systems I	3
ECE 329	Background Study in Electrical Machines	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 420	Energy Systems II	3
Electromagnetics Area [1]		
ECE 212	Electrical Circuits II	3
ECE 330	Electromagnetic Theory	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 432	Propagation of Wireless Signals	3
ENGR 210	Engineering Statics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Microelectronics Area [1]		
ECE 212	Electrical Circuits II	3
ECE 310	Microelectronics I	3
ECE 319	Background Study in Electronics	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 410	Microelectronics II	3
Systems Area		
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3

[1] Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Doctor of Philosophy. Major in Electrical Engineering.

General Ph.D. requirements apply. The preliminary examination consists of both a written and an oral examination. There is no foreign language requirement. Two semesters of ECE 591, will be required for on-campus doctoral students.

Power System Protection and Relaying Graduate Academic Certificate

Note: A grade of 'B' or higher is required in all coursework for this academic certificate.

Code	Title	Hours
ECE 523	Symmetrical Components	3
ECE 525	Power System Protection and Relaying	3
ECE 526	Protection of Power Systems II	3
Select 3 credits from the following Electives:		3
ECE 422	Power Systems Analysis	
ECE 452	Communication Systems	
ECE 476	Digital Filtering	
ECE 504	Special Topics	
ECE 524	Transients in Power Systems	
Total Hours		12

Courses to total 12 credits for this certificate

Engineering

Larry Stauffer, Dean (125 Janssen Engr. Bldg.; 208-885-6470).

Engineering Management: Eric Coats, Program Coordinator (104 Buchanan Engineering Lab 83844-1022; 208-885-7559; ecoats@uidaho.edu).

Industrial Technology: Lee Ostrom, Program Coordinator, (1776 Science Center Drive, Ste 306, Idaho Falls, ID 83402; 208-757-5427; ostrom@uidaho.edu).

Technology Management: Lee Ostrom, Program Coordinator (1776 Science Center Drive, Ste 306, Idaho Falls, 83402; 208-757-5427; ostrom@uidaho.edu).

Majors

- Industrial Technology (B.S.Tech.) (p. 225)

Certificates

- Fire Safety Undergraduate Academic Certificate (p. 224)
- Human Safety Performance Undergraduate Academic Certificate (p. 224)

Engineering Graduate Program

- Critical Infrastructure Resilience Graduate Certificate (p. 224)
- Emergency Planning and Management Graduate Academic Certificate (p. 224)
- Technology Management (M.S.) (p. 225)

Critical Infrastructure Resilience Graduate Certificate

With the growing need for a highly skilled and well versed cyber security workforce, especially in sectors of our nation's critical infrastructure, there is a need for guidance and recognition of accomplishment in graduate studies in this area, from multiple disciplines. The Critical Infrastructure Graduate Certificate is offered in the Technology Management program. Masters students in TM, Computer Science, Electrical and Computer Engineering, or Nuclear Engineering, as well as non-degree-seeking professionals, will be eligible to earn this interdisciplinary certificate.

The first course listed is required. The remaining are electives that meet specific objectives. Group 1 of electives covers fundamentals of security and risk management. Students choose two of these courses. Group 2 of electives provides domain-specific engineering fundamentals of cyber-physical systems. Group 3 of electives provides computer security concepts and skills.

Code	Title	Hours
TM 517	Critical Infrastructure Security and Resilience Fundamentals	3
Select 6 credits of electives from the following:		6
CS 536	Advanced Information Assurance Concepts	
ECE 469	Resilient Control of Critical Infrastructure	
INDT 470	Homeland Security	
INDT 472	National Incident Management Systems	
TM 529	Risk Assessment	
TM 516	Nuclear Rules and Regulations	
Select 3 credits of electives from the following:		3
CHE 445	Digital Process Control	
CS 452	Real-Time Operating Systems	
ECE 340	Microcontrollers	
ECE 443	Distributed Processing and Control Networks	
ECE 444	Supervisory Control and Critical Infrastructure Systems	
ECE 470	Control Systems	
ECE 477	Digital Process Control	
INDT 333	Industrial Electronics and Control Systems	
ME 481	Control Systems	
TM 514	Nuclear Safety	
Select 3 credits of electives from the following:		3
CS 438	Network Security	
CS 439	Applied Security Concepts	
CS 447	Computer and Network Forensics	
Total Hours		15

Courses to total 15 credits for this certificate

Emergency Planning and Management Graduate Academic Certificate

Code	Title	Hours
INDT 472	National Incident Management Systems	3
TM 525	Emergency Management and Planning	3
TM 526	Community Emergency Planning	3
Select two courses from the following:		6
INDT 470	Homeland Security	
TM 533	Chemical Hazards	
TM 534	Biological Hazards	
Total Hours		15

Courses to total 15 credits for this certificate

Fire Safety Undergraduate Academic Certificate

Code	Title	Hours
INDT 408	Fire Safety Hazard Analysis	3
INDT 409	Fire Suppression Design and Detection	3
INDT 410	Loss Control	3
INDT 411	Fire and Life Safety Management	3
INDT 412	Engineering for Fire and Life Safety	3
INDT 413	Community Planning and Design for Fire Protection and Management	3
Total Hours		18

Courses to total 18 credits for this certificate

Human Safety Performance Undergraduate Academic Certificate

Code	Title	Hours
INDT 362	Behavior Based Safety	3
INDT 464	Human Performance Fundamentals	3
INDT 466	Human Performance Field Investigation	3

INDT 462	Industrial Safety	3
or TM 528	Accident Investigation	
Total Hours		12

Courses to total 12 credits for this certificate

Industrial Technology (B.S.Tech.)

The Industrial Technology Bachelor of Science degree program is designed to provide students with the opportunity to develop in-depth knowledge and hands-on experience in basic and advanced industrial processes, procedures, planning, and management.

Required coursework includes the university requirements (regulation J-3 (p. 91)) and the following:

Code	Title	Hours
MHR 311	Introduction to Management	3
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ECON 202	Principles of Microeconomics	3
ENGL 317	Technical Writing	3
ENGR 105	Engineering Graphics	2
INDT 310	Introduction to Industrial Technology	3
INDT 311	Problems in Industrial Technology	1
INDT 332	Introduction to Analog and Digital Electronics	4
INDT 333	Industrial Electronics and Control Systems	3
INDT 350	Introduction to Materials Science	3
INDT 353	Manufacturing Systems	3
INDT 362	Behavior Based Safety	3
INDT 415	Impact of Technology on Society	3
INDT 434	Power Generation and Distribution	3
INDT 435	Network Administration	3
INDT 442	Systems Integration	3
INDT 443	Government Contract Law	3
INDT 444	Quality Assurance Organization and Management	3
INDT 446	Labor Law	3
INDT 448	Project and Program Management	3
INDT 453	Computer Integrated and Robotics Manufacturing Technology	3
INDT 462	Industrial Safety	3
INDT 484	Industrial Technology Capstone I	3
INDT 485	Industrial Technology Capstone II	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
PSYC 101	Introduction to Psychology	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select Technical Electives (not limited to the following): [1]		13
INDT 457	Lean to Green Sustainable Technology	
INDT 463	Industrial Transportation Safety	
INDT 464	Human Performance Fundamentals	
INDT 465	Construction Safety	
INDT 466	Human Performance Field Investigation	
INDT 470	Homeland Security	
INDT 472	National Incident Management Systems	
Total Hours		102

1 *This degree is currently only available at the Idaho Falls Center*

2 Elective credit can also be obtained through Technical Competency. Up to 24 credits can be obtained in this manner. Consult with your advisor for information on this process.

Courses to total 122 credits for this degree

Technology Management (M.S.)

Master of Science. Major in Technology Management.

Master's degree candidates must fulfill the requirements of the College of Graduate Studies and of the College of Engineering. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

Engineering Management

Erik R. Coats, Director, Engineering Management Program (322 E Front Street, Boise, ID 83702; ecoats@uidaho.edu (lieske@uidaho.edu)**; www.uidaho.edu/engr/engineeringmanagement); Denise Engebrecht, Student Advisor; phone 208-364-6123 denisee@uidaho.edu.**

The Engineering Management Program at University of Idaho is designed for engineering professionals moving into technical management roles. The Program is multidisciplinary, supported by faculty in the colleges of engineering, business, and science. Students will explore the analytical, technical, and human resource aspects of managing in a technical environment. Students will have the opportunity to expand their knowledge in their chosen field of expertise. Since the vast majority of engineers assume management roles sometime during their career, this degree program is typically pursued on a part-time basis by working engineers. Classes are offered by resident and adjunct faculty in Idaho Falls, Boise, and Moscow. All courses required for the program are available for distance learners through the College of Engineering's Engineering Outreach Program eo.uidaho.edu/.

The College of Engineering offers a M.Engr. (non-thesis) degree in Engineering Management. Admission to the program is based on: ability to complete graduate-level work evidenced by undergraduate transcripts; a B.S. in Engineering from an ABET/EAC accredited program, TOEFL score higher than 550 for International students, at least 2 years of engineering work experience beyond B.S. degree or currently employed as an engineer, and three letters of recommendation. One of the three letters of recommendation must be from a current or former employer.

Engineering Management Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the College of Engineering. See the College of Graduate

Studies (p. 232) section for the general requirements applicable to each degree.

- Engineering Management (M.Engr.) (p. 226)

Engineering Management (M.Engr.)

Master of Engineering. Major in Engineering Management.

General M.Engr. requirements apply. The Engineering Management degree requires 30 credits; a minimum of 15 credits must be engineering courses. The degree program includes 12 credits of required courses (see below) and the rest are electives based on particular program requirements. Each student will design a study plan in consultation with the Engineering Management Student Advisor which is then approved by the Director. Nearly all of the Engineering Management students do not live in Moscow and are allowed to take classes from other universities, especially elective classes, as appropriate and following University of Idaho policy for transfer courses.

Exit Requirement for the EM Degree Program: All students are required to complete the exit requirement in order to earn the Master of Engineering in Engineering Management. Successfully completing the exit requirement is accomplished through one of the following options. Option 1: Three (3) credits of qualitative elective will be satisfied by the student passing three (3) credits of EM 599 Non-thesis Masters Research and completing a non-thesis masters project following program requirements in effect at the time of registration. This option will include a presentation of the student's project to a committee, followed by a Final Defense typically based on the project and the student's coursework. Students must pass both the oral presentation and final defense. In total through this option students complete a minimum of 30 credits to earn the EM degree. Option 2: In addition to the core 30-31 credit EM curriculum, students must pass an additional onecredit course, EM 596 Capstone Integration, following program requirements in effect at the time of registration. Option 2 requires the student to complete a minimum of 31 credits to earn the EM degree. (2A) In completing EM 596, students must pass the CPEM examination administered by the American Society for Engineering Management (ASEM) and become a Certified Professional in Engineering Management (CPEM). (2B) Students who do not meet the work experience requirement for the CPEM exam may choose to complete a comprehensive exam, prepared and administered by EM faculty, to satisfy EM 596.

Code	Title	Hours
Required Courses		
ACCT 582	Enterprise Accounting	3
MHR 513	Leadership and Organizational Behavior	3
EM 510	Engineering Management Fundamentals	3
STAT 431	Statistical Analysis	3
Total Hours		12

Department of Mechanical Engineering

Steven W. Beyerlein, Chair (324I Engineering/Physics Bldg. 83844-0902; phone 208-885-4279; www.uidaho.edu/engr/ME).

Mechanical engineering applies the principles of science and technology to create products and systems which benefit mankind in several areas, including:

1. the conversion of energy from natural sources to provide power, light, heating and cooling, and transportation;
2. the design and production of machines to improve and lighten the burden of human work;
3. the creative planning, design, development, and operation of systems for utilizing energy, machines, and other resources;
4. the production of manufactured goods; and
5. the interface between technology and society.

Mechanical engineering is broad in scope and provides a wide range of careers for trained professionals in industry, business, government, and universities. Positions are available in design, testing, manufacturing, research, development, operations, system analysis, marketing, and administration. Mechanical engineers are often involved as professional team members in economic and social-humanistic matters and are responsible for the interaction of technical advances with social and environmental concerns.

Mission Statement

Our mission is to prepare students for entry into professional engineering practice and advanced study through our regionally-recognized program of high-quality instruction, integrated design and laboratory experience, and scholarship.

Program Educational Objectives

After 3-5 years on the job, a University of Idaho Mechanical Engineering practitioner is expected to:

1. Attain career advancement based on demonstrated knowledge and skill in engineering analysis, modeling/simulation, experimental methods, application of codes/standards, and design for manufacturing.
2. Achieve client and stakeholder satisfaction of engineering solutions while maintaining a reputation for generating technically valuable early prototypes and wise use of available time, talent and budgetary resources.
3. Establish recognition as a competent communicator within a field or industry through creation of clear problem definitions, generation of informative technical reports, participation in technical conferences/forums, and/or use of knowledge sharing technologies.
4. Seek life-long advancement through continued professional development such as entrepreneurship, pursuit of graduate degrees, professional licenses, and/or certifications.
5. Assume expanded responsibilities for collaboration with others including public and worker safety, environmental protection, ethical and legal practices, formal project management and involvement in professional communities or society at large.

Mechanical Engineering Student Outcomes

Upon graduation, students will have:

1. an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety

and welfare, as well as global, cultural, social, environmental and economic factors

3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Undergraduate Program

Successful completion of the approved curriculum results in the award of the Bachelor of Science in Mechanical Engineering (B.S.M.E.) degree. Our program educational objectives are based on the needs of our constituencies. We focus on the professional and personal development of our students and continuously assess and improve our undergraduate curriculum. Our department is a college and university leader in the use of innovative teaching methods, in vertical curriculum integration, and in the use of applied design projects. Students interact frequently and personally with the faculty and are mentored and advised by them. The strengths of our program are a solid engineering science foundation as demonstrated by the outstanding performance of our graduates on the nationwide Fundamentals of Engineering Exam, a required precursor to becoming a licensed Professional Engineer; a strong design experience featuring the design and construction of several projects; a strong laboratory experience featuring hands-on skills, state-of-the-art instrumentation, broad exposure to instrumentation and principles, and a senior project; multiple teamwork experiences, including the opportunity to lead and to serve in team roles; substantial use of appropriate engineering tools, including the best available software; and multiple communication experiences including written and oral presentations.

The Mechanical Engineering undergraduate program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org (http://www.abet.org).

General questions regarding the undergraduate program should be addressed to the advising coordinator at 208-885-5024, or by email, medept@uidaho.edu. Faculty members are available to discuss details of their specialty areas with interested students.

An academic minor in mechanical engineering is available. Contact the department for more information.

Graduate Program

The following graduate degrees are available in mechanical engineering: Master of Science (thesis), Master of Engineering (non-thesis) and the Ph.D. The department also offers a program in nuclear engineering. Please see the appropriate section in this catalog. Minimum preparation for graduate study in mechanical engineering is a B.S. degree in a mechanical engineering program that is accredited by ABET, Inc. Students entering the program with an engineering or physical science baccalaureate degree in a major other than mechanical engineering must demonstrate proficiency in the subjects required in the B.S.M.E. program. Individual student qualifications are assessed by the departmental graduate committee, which also determines undergraduate deficiencies.

The programs of study are designed to extend the student's understanding of the fundamental engineering sciences and their application to engineering systems design and analysis. Research programs are offered with specialization in many general topics; please see the departmental website for faculty research areas. We maintain and continuously improve a graduate curriculum. Graduate students receive quality mentoring and advising.

Graduate students will develop a plan of study in consultation with their academic advisor that provides for a reasonable concentration in a particular field of interest and a selection of related courses, some of which may be taught outside of the department. For M.S.M.E. and Ph.D. students, the thesis topic will generally be selected from research topics being pursued by members of the departmental faculty. Candidates for the M.E.M.E. degree have the option of an oral exam or presentation of a final project, which is normally given in the final semester of study.

We support education throughout the state of Idaho and beyond by providing quality distance education through the University of Idaho's Engineering Outreach program, and supporting, collaborating and including our faculty at the Boise and Idaho Falls campuses of the University.

Service

We provide engineering services (teaching, consulting, outreach, testing and research) to support industry and national laboratories. In addition, we provide service to professional societies, the college and university, and the region. We encourage our graduates to support the improvement of our program in formal and informal ways. These include student referrals, periodic evaluation, and donations of time, equipment and money.

Majors

- Mechanical Engineering (B.S.M.E.) (p. 227)

Minors

- Mechanical Engineering Minor (p. 229)

Mechanical Engineering Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Mechanical Engineering. Applicants for admission generally will have a B.S. degree in mechanical engineering. Those students admitted with degrees in other engineering fields will be expected to complete any undergraduate deficiencies. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Mechanical Engineering (M.Engr.) (p. 229)
- Mechanical Engineering (M.S.) (p. 229)
- Mechanical Engineering (Ph.D.) (p. 229)

Mechanical Engineering (B.S.M.E.)

This program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org .

Note: Pre-advising is required to register in any ME course.

Required course work includes the university requirements (see regulation J-3 (p. 91)), completion of the Fundamentals of Engineering (FE) examination and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
COMM 101	Fundamentals of Oral Communication	2
ENGL 317	Technical Writing	3
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
MSE 201	Elements of Materials Science	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
ME 123	Introduction to Mechanical Design	3
ME 223	Mechanical Design Analysis	3
ME 301	Computer Aided Design Methods	3
ME 313	Dynamic Modeling of Engineering Systems	3
ME 322	Mechanical Engineering Thermodynamics	3
ME 325	Machine Component Design I	3
ME 330	Experimental Methods for Engineers	3
ME 341	Intermediate Mechanics of Materials	3
ME 345	Heat Transfer	3
ME 416	FE Exam Review	1
ME 424	Mechanical Systems Design I	3
ME 426	Mechanical Systems Design II	3
ME 430	Senior Lab	3
ME 435	Thermal Energy Systems Design	3
PHIL 103	Introduction to Ethics	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Select one from the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Technical Elective requirements for Mechanical Engineering		
Select 15 credits from the following: [1]		15
BE 421	Image Processing and Computer Vision	
BE 425	Introduction to Biomedical Engineering	
BE 462	Electric Power and Controls	
ENGR 360	Engineering Economy	
ENGR 428	Numerical Methods	
ENTR 414	Entrepreneurship	
ENTR 415	New Venture Creation	
MATH 371	Mathematical Physics	
MATH 420	Complex Variables	
MATH 428	Numerical Methods	
MATH 432	Numerical Linear Algebra	
MATH 437	Mathematical Biology	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 471	Introduction to Analysis I	
MATH 472	Introduction to Analysis II	
MATH 480	Partial Differential Equations	
ME 401	Engineering Team Projects	
ME 404	Special Topics	
ME 410	Principles of Lean Manufacturing	
ME 412	Gas Dynamics	
ME 413	Engineering Acoustics	
ME 414	HVAC Systems	
ME 417	Turbomachinery	
ME 420	Fluid Dynamics	
ME 421	Advanced Computer Aided Design	
ME 422	Applied Thermodynamics	
ME 423	Human Factors and Ergonomics in Product Design	
ME 433	Combustion Engine Systems	
ME 436	Sustainable Energy Sources and Systems	
ME 438	Sustainability and Green Design	
ME 450	Fundamentals of Computational Fluid Dynamics	
ME 451	Experimental Methods in Fluid Dynamics	
ME 452	TechVentures: High Technology Entrepreneurship	
ME 458	Finite Element Applications in Engineering	
ME 461	Fatigue and Fracture Mechanics	
ME 464	Robotics: Kinematics, Dynamics, and Control	
ME 472	Mechanical Vibrations	
ME 481	Control Systems	
ME 490	Solid Modeling, Simulation and Manufacturing Capstone	
ME 519	Fluid Transients	
ME 521	Design Synthesis with Solid Modeling	
ME 525	Advanced Heat Transfer	
ME 529	Combustion and Air Pollution	
ME 539	Advanced Mechanics of Materials	
ME 540	Continuum Mechanics	
ME 541	Mechanical Engineering Analysis	
ME 544	Conduction Heat Transfer	
ME 547	Thermal Radiation Processes	
ME 548	Elasticity	
ME 549	Finite Element Analysis	
ME 550	Advanced Computation Fluid Dynamics	
ME 571	Building Performance Simulation for Integrated Design	
ME 580	Linear System Theory	
MSE 412	Mechanical Behavior of Materials	
MSE 415	Materials Selection and Design	

MSE 417	Instrumental Analysis	
MSE 423	Corrosion	
MSE 438	Fundamentals of Nuclear Materials	
NE 437	Radiation Effects on Materials	
NE 438	Fundamentals of Nuclear Materials	
NE 450	Principles of Nuclear Engineering	
OM 378	Project Management	
OM 439	Systems and Simulation	
OM 456	Quality Management	
PHYS 305	Modern Physics	
PHYS 351	Introductory Quantum Mechanics I	
PHYS 411	Advanced Physics Lab	
PHYS 428	Numerical Methods	
PHYS 443	Optics	
PHYS 464	Materials Physics and Engineering	
PHYS 465	Nuclear and Particle Physics	
PHYS 484	Astrophysics	
STAT 301	Probability and Statistics	
STAT 431	Statistical Analysis	
Any Approved 400/500 Level Course in another Engineering Discipline		
A maximum of 6 credits of the following may be selected:		
ME 307	Group Mentoring I	
ME 308	Group Mentoring II	
ME 401	Engineering Team Projects	
ME 407	Group Mentoring III	
Total Hours		113-114

[1] Fifteen credits of technical electives are required from the list. The breakdown of credits will be as follows: six credits must be an ME upper division course, three credits must be an upper division Math, Statistics or Physics course, the remaining six credits may be any course listed.

Courses to total 128 credits for this degree, not counting ENGL 101 , MATH 143 , and other courses that might be required to remove deficiencies.

To advance to upper-division courses, a student majoring in mechanical engineering must earn certification: the student may accumulate no more than three grades of D or F in the mathematics, science or engineering courses used to satisfy certification requirements. Included in this number are courses transferred from other institutions, multiple repeats of a single course, and single repeats in multiple courses.

In addition, students must also earn at least five grades of 'B' or better in these mathematics, science or engineering courses:

Code	Title	Hours
CHEM 111	General Chemistry I	3
COMM 101	Fundamentals of Oral Communication	2
ENGL 102	Writing and Rhetoric II	3
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 350	Engineering Mechanics of Materials	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
ME 123	Introduction to Mechanical Design	3
ME 223	Mechanical Design Analysis	3
ME 301	Computer Aided Design Methods	3
MSE 201	Elements of Materials Science	3
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3

A grade of P (pass) in any of these courses is considered as a C grade in satisfying this certification requirement.

To graduate in this program, a student may accumulate no more than five grades of D or F in the mathematics, science, or engineering courses used to satisfy graduation requirements. Included in this number are multiple repeats of a single course or single repeats in multiple courses and courses transferred from other institutions.

Mechanical Engineering (M.Engr.)

Master of Engineering. Major in Mechanical Engineering.

General M.Engr. requirements apply, along with departmental requirements as listed in the departmental graduate handbook.

Mechanical Engineering (M.S.)

Master of Science. Major in Mechanical Engineering.

General M.S. requirements apply, along with departmental requirements as listed in the departmental graduate handbook.

Mechanical Engineering (Ph.D.)

Doctor of Philosophy. Major in Mechanical Engineering.

General Ph.D. requirements apply, along with departmental requirements as listed in the departmental graduate handbook. Preliminary screening of candidates and program planning for those admitted are essential features of the Ph.D. program. Early in the program, the student must complete a qualifying examination that will be oral and possibly written. The preliminary examination is taken after most of the course work is completed. This examination also includes a presentation of the dissertation progress or proposal. No foreign language is required; however, the department does require a satisfactory level of achievement in mathematics and numerical analyses and in computer programming.

Mechanical Engineering Minor

Code	Title	Hours
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ME 123	Introduction to Mechanical Design (or equivalent introductory engineering/science course)	3

ME 223	Mechanical Design Analysis	3
Select 4 courses from the following:		12
ENGR 320	Engineering Thermodynamics and Heat Transfer	
or ME 322	Mechanical Engineering Thermodynamics	
ENGR 335	Engineering Fluid Mechanics	
ENGR 350	Engineering Mechanics of Materials	
ME 301	Computer Aided Design Methods	
ME 313	Dynamic Modeling of Engineering Systems	
ME 330	Experimental Methods for Engineers	
ME 410	Principles of Lean Manufacturing	
MSE 201	Elements of Materials Science	
Other technical electives as approved by the department chair		
Total Hours		24

Courses to total 24 credits for this minor

Program in Nuclear Engineering

Richard Christensen, Director (UI Idaho Falls, 995 University Blvd, Idaho Falls, ID 83402; 208-533-8102; rchristensen@uidaho.edu; www.uidaho.edu/idahofalls/nuclearengineering).

The world's growing need for energy requires a diversity of energy sources, including nuclear energy. Approximately 20% of the electricity used in the U.S. stems from nuclear power. As power plants continue to age there is a need to develop next-generation nuclear reactors and to educate future generations of nuclear scientists and engineers. The demand for nuclear engineers is projected to significantly outpace supply during the next decade. For more information please see our web page at www.uidaho.edu/idahofalls/nuclearengineering/.

Admissions Requirements and Procedures

The minimum requirements to enter any of the graduate programs in nuclear engineering are: an undergraduate degree in engineering or closely related field from an ABET accredited U.S. program, does not include technical degrees; and a cumulative GPA of 3.0 or better on a 4.0 scale. GRE General Exam is recommended but not required for students with an undergraduate degree from a U.S. ABET accredited program. The GRE General Exam is required for all other applicants. TOEFL (minimum score: computer based 83, paper based, 560) is required for all students whose primary language is not English. All applicants are required to submit 3 letters of recommendation, a 1-2 page Statement of Career Objectives and a 1-2 page Curriculum Vitae/Resume. Applicants to the graduate programs are reviewed on a case-by-case basis by the program's Graduate Committee. Some applicants who have a baccalaureate degree in a field other than engineering may be required to complete certain undergraduate deficiency courses before they will be allowed to take graduate level courses.

Nuclear Engineering Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Nuclear Engineering Program. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree. These degrees are offered only through the graduate program at the University of Idaho Center, Idaho Falls. Consult the Nuclear Engineering Handbook specific details.

- Nuclear Criticality Safety Graduate Academic Certificate (p. 230)
- Nuclear Technical Management Graduate Academic Certificate (p. 231)
- Nuclear Engineering (M.S.) (p. 230)
- Nuclear Engineering (M.Engr.) (p. 230)
- Nuclear Engineering (Ph.D.) (p. 231)

Nuclear Criticality Safety Graduate Academic Certificate

Students who wish to earn an academic certificate in Nuclear Criticality Safety have two possible tracks that can be used to complete this certificate. Students who are majoring in Nuclear Engineering or a closely related program are encouraged to complete the first track. Students who are majoring in Technology Management are encourage to complete the second track. Students interested in this academic certificate should contact the Director of Nuclear Engineering.

Track 1

Code	Title	Hours
NE 450	Principles of Nuclear Engineering	3
NE 535	Nuclear Criticality Safety	3
NE 555	Nuclear Criticality Safety II	3
Select one of the following:		3
NE 554	Radiation Detection and Shielding	
Upper-Division or Graduate level Mathematics course		
Total Hours		12

[1] *A grade of 'B' or higher is required in all coursework for this academic certificate.*

Courses to total 12 credits for this certificate

Track 2

Code	Title	Hours
TM 513	Nuclear Criticality Safety	3
TM 514	Nuclear Safety	3
TM 516	Nuclear Rules and Regulations	3
NE 450	Principles of Nuclear Engineering	3
Total Hours		12

Courses to total 12 credits for this certificate

Nuclear Engineering (M.Engr.)

Master of Engineering. Major in Nuclear Engineering.

General M.Engr. requirements apply.

Nuclear Engineering (M.S.)

Master of Science. Major in Nuclear Engineering.

General M.S. requirements apply.

Nuclear Engineering (Ph.D.)

Doctor of Philosophy. Major in Nuclear Engineering.

General Ph.D. requirements apply. Preliminary screening of candidates and program planning for those admitted are essential features of the Ph.D. program. Early in the program, the student must complete a qualifying examination, which will be oral and possibly written. The preliminary examination is taken after most of the course work is completed. This examination is generally limited to the areas of emphasis indicated by the student's dissertation topic and includes a presentation of the dissertation proposal; it will be written and oral. No foreign language is required; however, the program does require a satisfactory level of achievement in mathematics and numerical analyses and in computer programming.

Nuclear Technical Management Graduate Academic Certificate

This certificate consists of 18 credits, and requires six 3-credits courses. The courses should be taken in conjunction with the Technology Management M.S. or the Nuclear Engineering M.S.

Code	Title	Hours
INDT 434	Power Generation and Distribution	3
NE 527/TM 537	Nuclear Material Storage, Transportation, and Disposal	3
NE 528/TM 538	Management of Nuclear Facilities	3
TM 514	Nuclear Safety	3
TM 516	Nuclear Rules and Regulations	3
Select one required course for TM/NE:		3
NE 450	Principles of Nuclear Engineering (required for TM majors)	
TM 520	Leadership and Conflict Resolution in a Technological Environment (required for NE majors)	
Total Hours		18

Courses to total 18 credits for this certificate

COLLEGE OF GRADUATE STUDIES

Jerry R. McMurtry, Dean (104 Morrill Hall; 208-885-6243).

The College of Graduate Studies was formally organized in 1925 (then designated as the Graduate School) but the university has awarded advanced degrees since 1897. The College of Graduate Studies encompasses all graduate programs of the university but does not supervise programs in the College of Law. This coverage of all regular disciplines and professional fields provides a wide variety of academic programs. Enrollments are large enough to make possible the vital interchange of ideas among students and between students and faculty that is necessary for graduate programs and yet enrollments are sufficiently small to permit close faculty-student relationships. Interdepartmental cooperation is an important factor on the Idaho campuses. The University is the chief research center for the state and as such operates active graduate programs in most areas providing a broad research base upon which graduate programs have been built.

Graduate Council

The Graduate Council is the representative body of and is empowered to act for the Graduate Faculty. It is responsible to and reports to the Graduate Faculty, which retains the authority to review actions of the council. Its function is to promote graduate instruction and research, to formulate policies and long-range plans for the graduate programs, and to review and act on student appeals and petitions that involve exceptions to accepted regulations and procedures of the College of Graduate Studies.

The Graduate Council is constituted of one member elected by and from the constituent graduate faculty of each of the colleges that offer programs leading to graduate degrees (except the J.D. degree), four members of the Graduate Faculty appointed by the president of the university, two graduate students, the dean of the College of Graduate Studies, who serves as chair, and the assistant or associate dean of the College of Graduate Studies, who serves as vice chair.

Undergraduate Enrollment in the College of Graduate Studies

A senior (90 or more credits) who has a cumulative grade-point average of 3.00 or higher may register for courses at the 500-level. Graduate courses taken as an undergraduate student will automatically be recorded on the undergraduate transcript. Students desiring to have graduate level courses taken as an undergraduate placed on a graduate transcript must follow the policies on reserving courses for the graduate transcript. If the credit reservation form is approved, a separate graduate transcript will be created for the student. Capable students who are in their senior year can thus begin limited graduate work at an earlier date than would otherwise be possible.

Reserving Undergraduate Courses for the Graduate Transcript

Students desiring to move courses from their undergraduate transcript to a graduate transcript may do so by filing the Credit Reservation Form with the College of Graduate Studies. Courses from the undergraduate record may be moved to a graduate transcript if they meet the following criteria 1) the student has a cumulative GPA of 3.00 or greater; 2) the course is at the 400 level or higher; 3) the grade in the course is A or B; 4) the course was not used to meet the requirements for the undergraduate degree. No more than 12 credits of undergraduate work can be moved to the graduate transcript under this policy.

Students are responsible to initiate the course reservation process as soon as they know they wish to move a course to the graduate level and prior to receiving their baccalaureate degree. No courses will be moved to the graduate transcript once the baccalaureate degree has been conferred. Undergraduate courses completed at another institution are not eligible to be reserved. Courses will not be reserved until final grades for the term have been posted. Students who have courses placed on a graduate transcript and later wish to be admitted to the College of Graduate Studies for work toward an advanced degree must apply for admission to the College of Graduate Studies following the usual procedures. All courses placed on the graduate transcript, regardless of course level, will be assessed graduate fees.

General Graduate Regulations

The regulations described in this section are the minimum standards established by the faculty of the College of Graduate Studies. Graduate programs may establish additional regulations, including additional residence requirements, above the minimums set by the College of Graduate Studies.

Student Responsibilities

The student is responsible for complying with all rules, procedures, and time limits as established by the graduate faculty.

Appointment of Major Professor and Committee for All Degree Seeking Graduate Students

All major professors must be member of the UI Graduate Faculty and have an appointment in the program in which the student is enrolled. It is the students' responsibility to identify and select their major professor.

Co-major Professors are allowed in certain circumstances and must have earned a degree equal to or higher than the degree being sought by the student. Co-major professors must be approved by the dean of the College of Graduate Studies. Circumstances where a co-major professor is appropriate are as follows:

- Senior faculty member mentoring a junior or new faculty member
- Non-teaching research faculty with recognized research or creative activities necessary for the completion of the students' dissertation or thesis
- UI faculty employed via a cooperative agreement with state or federal agencies
- Emeritus faculty with expertise in the students' field of study
- When interdisciplinary research is being conducted

All master's degree seeking graduate students are required to formally appoint a major professor by using the Appointment of Major Professor form within the first year following enrollment in the program. (For the M.F.A. program, within three semesters of registration, the student and the departmental administrator or graduate coordinator nominates the major professor.) For non-thesis master's and specialist students are strongly encouraged to select or be assigned a major professor no later than the end of the first semester and it is required by the end of the first year. It is important to note that the Interdisciplinary Studies master's degree requires at least four members on a student's committee, whether the student is thesis or non-thesis. A committee will consist of at least one member from each of the two principal disciplines involved in the

student's program, one from a supporting discipline, and one member recommended to or appointed by the College of Graduate Studies.

Doctoral students are required to select a major professor no later than the end of the third semester in the program.

The committee, if required, is recommended by the major professor and the student and approved by the graduate program's administrator and the dean of the College of Graduate Studies. At least one-half of the members of the committee must be members of the UI Graduate Faculty. A faculty member may not serve on a committee for a student who is seeking a degree higher than the faculty member has attained. (For the M.F.A. program, the committee consists at least of the major professor, a second faculty member from the major field and a member from a discipline outside the major department's discipline(s).)

Periodically, a qualified person with a particular expertise is requested to serve on a student's committee on a one-time appointment. The person must have written approval from the dean of the College of Graduate Studies in advance of the individual's committee participation. Should the person be recommended for multiple committees, he/she would need to be approved as an adjunct or affiliate faculty member and, therefore, would then be considered an associated faculty member of the program. It is the intent of the Graduate Council that this privilege be used sparingly and only when the situation indicates its necessity.

Removal of Faculty from a Committee

A faculty member can be removed as a major professor or a committee member if it is determined that continued membership is not in the best interest of the graduate program's or the student's. Such a request would be initiated by the student and advanced only if the remaining committee supports such request. The determination of action will be made through deliberation between the program's dean and the dean of the College of Graduate Studies. This policy is not designed to question or remove a faculty's inherent right to minority opinion regarding research or academic standards.

A faculty member who has separated from the university, other than those with emeriti status, must be replaced as the major professor or a committee member on all of his or her student committees.

Exceptions to the above policy must be approved in advance of committee participation and in writing by the dean of the College of Graduate Studies. Reasons for considering an exception could include, but are not limited to: the anticipated completion date of the student; if the student is better served without committee disruption; if the separated faculty member becomes adjunct faculty; or if there are intellectual property issues to be considered.

Qualifying Examination

If such an examination is required, it is conducted according to the program's procedures and is a prerequisite to the preparation of a study plan. A report of this examination is not submitted to the College of Graduate Studies.

Graduate Reviews for the M.F.A

Graduate reviews are conducted by department graduate faculty members. The initial graduate review is conducted in the first semester of registration and serves to assess the background of the student in both major and supporting fields and to provide in part the basis for the preparation of the student's study plan. The remaining reviews are used to assess growth and the ability to complete the program.

Preparation and Submission of Study Plan

Early in the student's academic career, the student prepares in conference with the major professor (and committee, if required by department) a study plan outlining all course work to be completed to fulfill the requirements for the degree. Normally, the study plan will include some work to be taken outside of the major department. The study plan is submitted for the approval by the student's major professor, the program administrator, and the dean of the College of Graduate Studies. Any subsequent changes in the study plan must receive the same approvals.

All degree seeking graduate students must have a study plan on file with the College of Graduate Studies. Study plans cannot be processed without an assigned major professor. All masters and specialist degree seeking students are required to file a study plan with the College of Graduate Studies by the end of the first year of attendance. (For the M.F.A. program, students must prepare a study plan within two semesters of registration (or two summer sessions for those attending in the summer only.) Doctoral degree seeking students are required to file a study plan with the College of Graduate Studies by the end of the third semester in the program.

Research Approval

Prior to beginning any research projects, approval must be granted by one or more of the following groups, if it applies to the research that is being conducted: the Institutional Review Board (IRB) for research involving human subjects; the Institutional Animal Care and Use Committee (IACUC) for research using vertebrate animals; the Institutional Biosafety Committee (IBC) for research using any biological agents or recombinant DNA; the Idaho Research Foundation for research that has the possibility of patent or license outputs; the University Research Office for research involving agents or federal controls on the development, use and distribution of technology; or the Office of Sponsored Programs for activities funded through external grants and contracts. Should the research methodology or source of funding change, the appropriate group must be notified.

Petitions

Students and major professors are advised that the right of petition exists to waive or modify some university regulations. University academic petitions (see Academic Appeals Process (p. 78)) request waiver or modification of university regulations. College of Graduate Studies petitions request waiver or modification of regulations in this section. Favorable action can be expected only when circumstances and the presentation clearly justify an exception. Precedents are not set by previous actions and may not form the basis of a petition; rather the situation concerning the student involved is given consideration on an individual basis. An appeal of the decision made by the College of Graduate Studies petitions committee can be requested through Graduate Council. Further appeals may be made to the Provost's Office.

Once a College of Graduate Studies petition is submitted, the Dean or Associate Dean may act on or, in certain cases, will appoint a committee to hear the petition. The committee will consist of current Graduate Council members, when possible. The committee will review materials specifically related to the petition from both the student and College of Graduate Studies. The student's presence is not required and additional information may be requested by the committee. The committee's recommendation of action is then forwarded to the Graduate Council for review. Graduate Council will decide to support or reject the committee's recommendation and render a decision on the petition. Graduate Council may request a hearing to review all of the information related to the

petition. The final decision of the Graduate Council may be appealed to the Provost. (See Faculty Staff Handbook 2500)

A fee is charged for each petition submitted to the Academic Petitions Committee or College of Graduate Studies.

Registration and Enrollment Requirements

Graduate students engaged in **ANY** activity requiring faculty or staff time and consultation, or the use of any UI facilities must register for the number of credits appropriate to the degree of activity involved during the semester of activity. Such activity includes, but is not limited to: writing, defending, or submitting a thesis or dissertation; research; working on or completion of a non-thesis requirement; or taking a preliminary examination. A student who was appropriately registered during a previous term and did not complete all the requirements by the end of that term but does so before the official opening date of the new term, is awarded the degree at the end of the following term without further registration.

Annual Enrollment Policy

Annual enrollment is required for all degree seeking graduate students. Annual enrollment is defined as registering for at least one credit at the 500 or higher level every 12 months. Professional development courses do not satisfy the annual enrollment requirement.

If annual enrollment is not maintained and the absence has been five or fewer terms, a request for reenrollment in the program is required prior to any future registration by completing the Request for Reenrollment form available on the College of Graduate Studies website. The reenrollment decision is made at the program level with final approval through the College of Graduate Studies and should be requested well in advance of the requested semester of return.

If annual enrollment is not maintained and the absence has been for more than five terms, a request for readmission to the program is processed through the Graduate Admissions Office as well as reenrollment through the College of Graduate Studies. The **readmission** decision is made at the program level and forwarded to the Graduate Admissions Office. The **reenrollment** decision is made at the program level and forwarded to the College of Graduate Studies.

A student may request approval of a planned leave if the anticipated absence will be longer than one year but for no more than five terms. Approval must be given in advance of the time of absence by completing the Approval of Planned Leave form with signatures from the major professor, program administrator, and the dean of the College of Graduate Studies.

A reenrollment fee is charged each time a reenrollment application or readmission form is processed. Any appeals to this policy are to be made to the dean of the College of Graduate Studies.

Change of Program

A student is admitted for work in a specified program and may not change without approval of the new program's administrator. Such procedure is formalized by a Change of Curriculum form signed by the chair of the program the student is leaving and the chair of the program in which the student wishes to enroll. The form must be approved by the dean of the College of Graduate Studies before it is forwarded to the Registrar's Office.

Credit Requirements for Full Time Students

A student is considered full time academically when registered for 9 or more credits. See also specific credit guidelines under "Student Financial Aid Services (p. 77)."

Regular Semester or Summer Session

The credit limit for a graduate student is 16 credits per semester or summer session (excluding courses taken for audit). With approval from the Associate Dean and a Change of Registration form, a student may enroll in up to 22 credits in the fall and spring semesters and 18 credits in the summer session.

Correspondence Courses

Credits earned in University of Idaho correspondence courses are applied to a graduate program only with the prior written approval of the dean of the College of Graduate Studies. Subject to approval by the appropriate program's administrator, correspondence credits from other institutions that are accepted for graduate credit by that institution may be accepted toward degree requirements. Grades earned in correspondence courses are not calculated into the student's GPA.

Probation, Disqualification, and Reinstatement

Graduate students remain in good standing if the semester GPA and the cumulative GPA are 3.00 or higher. A graduate student is placed on academic probation after any semester or summer session in which a GPA of less than 3.00 is earned in courses placed on the graduate transcript, regardless of the student's cumulative GPA. Students on academic probation who attain a semester GPA of 3.00 or higher during the next or subsequent semester or summer session after being placed on probation, but whose cumulative GPA is still below a 3.00, will remain on academic probation until the cumulative GPA is a 3.00 or higher.

The student will be disqualified if a semester GPA of less than 3.00 (regardless of cumulative GPA) is earned on courses placed on the graduate transcript during the second, consecutive semester or summer session in which regular grades of A, B, C, D, or F are received.

If a graduate student who is on probation receives an Incomplete during a semester, the revert grade listed for the Incomplete will be used to calculate the GPA for that semester. If the calculated semester GPA is 3.00 or higher, the student will be allowed to register for a current or future semester. If the calculated semester GPA is less than a 3.00 GPA, the student will be disqualified and will not be allowed to register for current or future semesters or sessions. If the student has registered pending receipt of the revert grade, the student will be disenrolled. Once the work is completed and a final grade is given, the GPA will be automatically recalculated.

A graduate student may be reinstated after disqualification under the following conditions: the student may not enroll as a graduate student for at least one semester (fall or spring), must get the positive recommendation of his or her program's administrator, and must get College of Graduate Studies permission. Reinstatement is granted for a specific semester only. The student must receive at least a 3.00 GPA the first semester back in the College of Graduate Studies. If a student does not register for that semester, he or she must again seek College of Graduate Studies permission for reinstatement. A student will remain on probation as long as the cumulative GPA is below a 3.00.

Grade Requirements

In order to be eligible for graduation, a candidate for an advanced degree must have a cumulative GPA, based on all grades on his or her graduate

transcript, of at least 3.00 (A = 4.00) and at least a 3.0 overall GPA across all courses listed on the approved study plan. The relevant GPA is calculated as stated in regulation E. Courses in which grades of D or F are received may not be counted toward the satisfaction of degree requirements; however, those grades are included in the GPA.

Deficiencies

Courses that are needed to provide background for the student's program may be taken for audit or under the pass/fail option, unless the program advises otherwise. See rules for the pass/fail option under regulation B-11. When deficiency courses are taken for regular credit the resulting grade will be included in the computation of the GPA.

Foreign Language

There is no College of Graduate Studies foreign language requirement for a graduate degree; however some programs require a language examination or special course work.

Catalog Issue

The pertinent requirements for graduate degrees are those contained in the most recent UI catalog issue that was in effect at the time of, or subsequent to, the candidate's admission into a specific graduate program as a degree seeking student. A catalog issue is valid for a maximum of seven years from its effective date. The effective date of a catalog issue is the first Monday following spring graduation.

Application for Advanced Degree

The Application for Advanced Degree is submitted electronically by the student to the College of Graduate Studies, via VandalWeb, according to the deadline outlined in the academic calendar. In order for a student to apply for an advanced degree, a study plan must be posted by the Registrar's Office. Graduation applications are term specific. To change a graduation semester the current application must be canceled and the student must reapply for a subsequent term by the deadline.

Non-thesis Requirement (Non-thesis Master's and Specialist Degrees)

This exit requirement (an examination, presentation, portfolio, recital, project, or any requirement other than a thesis) is completed by non-thesis master's and specialist students after the completion of most or all of the degree requirements. The program establishes the format and time frame and reports the results of the non-thesis requirement to the College of Graduate Studies using the Non-Thesis Report form. The exit requirement, if failed, may with the program's approval be repeated once. The interval before the second attempt may not be less than three months or longer than one year. No more than 2 credits may be used for completing the exit requirement may be used toward the degree. If a student fails the exit requirement twice, or the program does not allow the student to repeat the exit requirement after the first failure, or the student does not retake the exit requirement within a year, the student is automatically moved to unclassified enrollment status and is no longer in the degree program.

Final Defense (Master's thesis, Ph.D., Ed.D ., and D.A.T. Degrees)

The final defense must be completed three weeks prior to the last day of the term in which the student plans to graduate. Before the final defense, the "Request to Proceed with Final Defense" form (see www.uidaho.edu/cogs/forms) must be submitted to the College of Graduate Studies. Ph.D., Ed.D., and D.A.T. students are required to submit the form at least 10 working days prior to the defense. Thesis students must have the form submitted at least one day prior to the defense. The defense is usually oral but part may be written. The candidate is required to defend his or her work and show a satisfactory knowledge of the program and supporting fields. A majority vote of the committee is necessary for a candidate to pass this defense. The defense, if failed, may with the programs approval be repeated once. The interval before the second attempt may not be less than three months or longer than one year.

Following a successful defense of his or her thesis, the candidate must submit the final electronic version into ETD/Proquest and the final signed bond paper copy to the College of Graduate Studies within six months; otherwise, the candidate must defend the thesis again and may be required to revise it or write an entirely new one. If a student fails the final defense twice, or the program does not allow the student to repeat the defense after the first failure, or the student does not repeat the defense within a year, the student is automatically moved to unclassified enrollment status and is no longer in the degree program.

Theses and Dissertations

Definition of a Dissertation

A dissertation documents a student's original research which significantly advances knowledge in a discipline. A dissertation provides evidence of leadership in scholarship and demonstrates a student's ability to think critically and independently. A dissertation is publicly defended by the student, and is evaluated by the dissertation committee. A dissertation is made publicly accessible per the College of Graduate Studies guidelines.

Independent Work and Collaboration in Dissertation

A dissertation can be the outcome of independent or collaborative research. If submitting collaborative work through multi-authored articles in the dissertation, the student must demonstrate primary responsibility and authorship of the dissertation, and include a clear statement of the student's specific contribution to the collaborative work. This contribution statement must be approved by the dissertation committee and included in the front matter of the final product. The contribution statement should clearly and specifically articulate the attributions of any co-authors included in the dissertation articles.

The expectation is that the student played a significant role in most, if not all aspects of the dissertation, demonstrating contributions to critical components of the project as appropriate for their field of study (e.g. project design, data generation and collection, analysis, etc.)

Defense of Dissertation

To be awarded a Ph.D. or an Ed.D. a student must have a public presentation and defense of their work, and they must pass the defense. The specifics of the defense process will be determined by their home department(s).

Thesis and Non-Thesis Statements

University of Idaho students pursuing a Master's degree will follow a Thesis or Non-Thesis Track that parallels expectations in their specific field. In this pursuit for further knowledge and experience, students should be independently driven in their research focus while still working with the committee to frame their professional approach. This may be done through research proposals, project outlines, competency exam, presentations, performances or other suitable projects determined by the student with approval by the committee

It is the student's responsibility to form strong interconnections between their research focus and their final presentation(s) of this work in order to fulfill degree requirements within each degree program.

Definition of a Thesis

A thesis communicates a student's original research results and is a published record of their research. The thesis is prepared and publicly defended by the student to be evaluated by the major professor and committee. The thesis demonstrates a student's ability to think critically and independently about a topic approved by their major professor.

Independent Work and Collaboration in Thesis

Please see discussion of Independent Work and Collaboration in Dissertation (see above). As stated for a dissertation, thesis students must also provide a contribution statement that clarifies the significant role and contribution in the research process.

Defense of Thesis

To be awarded an MFA (terminal), MS or MA, a student must complete a public presentation and defense of their work, and they must pass the defense. The specifics of the defense process are established by the major professor and committee within the guidelines of COGS.

Definition of a Non-Thesis

To be awarded an MFA (terminal), MS or MA and for specific specialist and professional degrees, a final examination, portfolio, recital, performance, project, and/or presentation significant to a program's requirements is completed by non-thesis master's students. Each degree program has established expectations for fulfillment of the degree.

Satisfactory Academic Progress and Performance

Enrollment in the College of Graduate Studies allows students to continue graduate study and research through the University of Idaho only as long as they maintain satisfactory academic standing and are maintaining satisfactory progress and performance toward completion of their graduate degree program. See section L (p. 100) – Academic Standing, Probation, Disqualification, and Reinstatement

Satisfactory academic standing is defined under the rules of probation and disqualification and provisional admission and may or may not have an effect on the use of this policy.

Programs are encouraged to have a written policy distributed to all students that states the standards for satisfactory progress and performance. Examples of the program's requirements that may be used to measure progress or performance toward the degree are, but not limited to, the timely completion of: required course work, filing of appropriate paperwork, failure to complete the annual review process, the program's qualifying, preliminary or other examinations; attendance at seminars or other professional activities; or using acceptable safety or security standards in performance of duties.

Annual Review

The annual review process is initiated by the student and completed by the major professor using the Annual Evaluation and Performance Report http://www.uidaho.edu/cogs/forms provided by the College of Graduate Studies. If a major professor has not been appointed, the program's administrator will conduct the review. When completed, the reviewer will recommend that the student continue in the program, receive a warning, or be dismissed from the program.

- **Warning.** Should a warning be given, the student must be informed in writing of the concern, the current program policy, the length of the warning period, and expectations that must be met to be removed from a warning status. The Associate Dean of the College of Graduate Studies is notified of this action. An appeal of a recommendation for a warning may be made to the Dean of the College of Graduate Studies.
- **Dismissal.** If Dismissal is recommended it may or may not be preceded by a warning period. If dismissal is recommended, the program's administrator forwards the recommendation and documentation to the Associate Dean of the College of Graduate Studies. The Dean of the College of Graduate Studies will review the recommendation for dismissal and, if appropriate, will convene a committee of graduate faculty to review the dismissal recommendation. The student, the major professor, and the program's administrator will be allowed to appear before the committee. The committee will make a recommendation for action to the Dean of the College of Graduate Studies who will make the final decision. Dismissal is from the student's degree, program and from the College of Graduate Studies.
- **Appeals.** Students may appeal the Dean's decision directly to the Graduate Council. No action will appear on the transcript unless recommended by Graduate Council.

Assistantships are open to domestic and international students who are regularly enrolled students in the College of Graduate Studies.

Students in the provisional enrollment category or in the unclassified enrollment category are NOT eligible to receive assistantships.

An inquiry for a position or award should be addressed to the administrator of the graduate program in which the applicant plans to enroll for graduate study. Appointments include a work requirement of up to 20 clock hours per week. Assistants are considered students. Assistants who provide primary teaching responsibilities, grading assignments, assisting with the delivery of instruction through technology, and providing other assistance related to instruction under the active supervision of a member of the university faculty are teaching assistants. Assistants who provide support of research, scholarship, or creative activity are research assistants. (See FSH 1565 H-2 for full definitions.) Those appointed to assistantships supported by the university are advised that the appointments are tenable only in the program of the major field of study, except where prior written exceptions are made. Annual leave, sick leave, and health insurance benefits are not available for graduate assistants.

Continuation of any assistantship after the first semester is contingent upon satisfactory academic performance, satisfactory teaching and/or laboratory performance, progress toward your degree, and abiding by the program and University's policies and procedures. UI policies are available online in the Faculty-Staff Handbook.

Assistants are required to sign a Terms of Employment form and a Patent and Copyright Agreement for University of Idaho Employees. All assistants are required to have personal health insurance coverage or enrollment in the Student Health Insurance Program. Salaries for assistantships vary depending upon the graduate program, length of graduate service and whether they are for an academic year or for 12 months. Contact program for current salary levels.

All new teaching and/or research assistants are required to attend the TA/RA Institute prior to the beginning of the semester in which they are first offered an assistantship. New TA/RA's are also required to complete

a course through BbLearn. All new international TA's are required to register for INTR 508.

In addition, nonresident tuition will be waived for persons holding full appointments and a pro rata portion of nonresident tuition will be waived for persons holding partial appointments. However, **each person who holds a full appointment as an assistant is required to pay the uniform student fees and tuition charged to registered full time students, regardless of the number of credits for which the student is registered.** Persons accepting part-time assistantships will be required to pay the uniform student fees and tuition based on the number of credit hours for which the person is registered.

Students on an assistantship cannot use a staff or staff spouse fee waiver or senior scholar waiver.

Research fellowships are awarded by various colleges. Research conducted on fellowships may or may not be used for dissertation purposes. Credit enrollment and stipends vary according to the particular fellowship. Fees and tuition are charged, but in some cases may be remitted, depending on the type of fellowship and the availability of funds. Inquiries should be addressed to the program administrator in which the applicant plans to enroll.

Master's Degrees

Credits

All master's degree programs require a minimum of 30 credits. Some master's degree programs may require more. Additional work may be stipulated in individual cases to meet particular objectives or need for additional background. Courses used toward an undergraduate degree, professional development courses or courses on a professional development transcript are not available to be used toward a graduate degree.

No more than three credits of workshop or workshop equivalent courses may be used toward the graduate degree.

Credit in course 500 (Master's Research and Thesis) cannot be counted toward a non-thesis master's degree. Although no limit is imposed on the number of credits that may be earned in course 500 for degrees with thesis, only a maximum of 10 credits in course 500 in the major of the degree can be used to fulfill master's degree requirements (a lower limit may be set by the program). Up to five credits of course 599 (Non-thesis Research) are allowed to count towards a non-thesis master's degree; however, if a thesis option exists for the program, no more credits of course 599 are allowed toward the non-thesis master's degree than half the number of credits allowed for course 500 toward the program's master's degree.

Transfer, Correspondence Study, Non-degree Credit, and Over-aged Credit Limitation

The combined total of transfer credits, correspondence credits, non-degree credits, credits moved from an undergraduate transcript that were not used toward an undergraduate degree, and approved credits more than eight years old at the time the degree is awarded shall not exceed 12 credits for master's programs designated as requiring 36 or fewer credits, and shall not exceed one-third of the total credits in designated programs requiring more than 36 credits. The student's program may set a lower limitation. Credits can be transferred to UI, with the consent of the student's committee and the dean of the College of Graduate Studies, only if the institution from which the course credits are being transferred has a graduate program in the course's discipline or, should there be no graduate program in the course's discipline, if an exception has been granted by the Dean of the College of Graduate Studies. All credits used toward graduate degrees must be from regionally accredited American institutions or from non-US institutions recognized by the appropriate authorities in their respective countries. Transfer credits are subject to all other Graduate College rules and regulations. See additional information on accreditation: www.uidaho.edu/registrar/transfer/evaluation/accreditation.

Second Master's Degrees

A student who has a master's degree or is working on a master's degree may obtain a second master's degree only in a different major, subject to the approval of the dean of the College of Graduate Studies. Up to six credits of course work used to satisfy the requirements for the first degree may be applied to the second; all other catalog requirements and credit requirements in UI courses must be fulfilled. If the courses are transfer courses, they are counted as a part of the credits that are allowed for transfer, correspondence, non-degree, over-aged credits and credits moved from an undergraduate transcript.

With department approval, a student in the M.F.A. Theater Arts program may use up to 30 credits from a M.A. Theater Arts program toward the M.F.A. A student who is enrolled in a doctoral program or who has a doctorate may obtain a master's degree in a different field and use up to 6 common credits or more if approved by Graduate Council. A student who has a doctorate may not subsequently obtain a master's degree in the same field.

Concurrent Graduate/Law Degrees

UI law courses used toward an approved UI concurrent graduate degree must be approved by the College of Graduate Studies and included on the graduate student's approved study plan. Courses with grades and credits earned in these approved law courses will be posted to the student's graduate academic transcript as a pass (P) upon receipt of the Course Level Adjustment form in the UI Registrar's Office. See the Accounting (p. 157), Environmental Science (p. 302) and Water Resources (p. 137) sections in the individual department section for additional information on concurrent degrees.

Awarding M.F.A. Degrees to Members of the Faculty

A UI faculty member with rank of senior instructor or above may not be awarded an M.F.A. degree through the department or corresponding program in which he or she is employed, unless that faculty member had been admitted to that degree program before attaining such academic rank.

Master of Accountancy

The M.Acct. degree is 30 credits. At least 18 must be in courses at the 500 level and the remainder may include one 400 level course in the major and 300 and 400 level courses in supporting areas, to be approved by the major professor. A non-thesis requirement must be met. Students enrolled in the concurrent M.Acct./J.D. may use 15 credits of law courses toward the M.Acct. degree only if the law degree is completed.

Master of Architecture

The M.Arch. degree requires a design project. Refer to the Art and Architecture section of this catalog for a definition of specific admission and degree requirements. Of the minimum 45 credits required for the degree, 24 must be at the 500 level; the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas. All credits toward the degree must be earned in residence at UI or during internship and study abroad. A final design project must be accepted.

Master of Arts

In some fields, all candidates for the M.A. degree are required to present a thesis; in others the thesis is optional or not required. Consult the departmental section for specific descriptions. Of the minimum 30 credits required for the degree, at least 18 credits must be at the 500 level; the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas. For the thesis student, a thesis is required. For the non-thesis student, a non-thesis requirement must be met.

Master of Arts in Teaching

The M.A.T. is primarily for certified teachers who wish to strengthen their subject-matter preparation. Enrollment in this program of study requires the consent of the chair of the subject-matter department. The major professor is from the subject-matter department; the co-advisor is from the College of Education. The general requirements of the College of Graduation Studies apply except that, of the minimum 30 credits required, only six must be in courses at the 500 level, at least six must be in courses offered by the College of Education at the 400/500 level, excluding workshops, and at least 20 must be in courses in the subject field. These courses may be at the 300 or 400 level, including 300 level courses in the major field if they are a part of the logical sequence of study. A non-thesis requirement in the subject field must be met.

Master of Business Administration

The M.B.A. is a professional fee program that is delivered in an executive format in northern Idaho. This non-thesis program consists of 42 credits at the 500 level. Consult the College of Business (p. 156) for specific details.

Master of Education

To complete the M.Ed., a non-thesis degree program, the student must fulfill the program's non-thesis requirement. Of the minimum 30 credits required, at least 18 must be in courses at the 500 level; the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas.

Master of Engineering

The M.Engr. is a non-thesis degree. A minimum of 30 credits is required; at least 18 must be in courses at the 500 level and the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas. A non-thesis requirement must be met. Majors are offered in agricultural, chemical, civil, computer, electrical, mechanical, and (at the University of Idaho Center, Idaho Falls only) nuclear engineering. The prospective student should consult the specific department for special entrance requirements.

Master of Fine Arts

The M.F.A. is the professionally recognized terminal degree in fine arts including art, creative writing, and theatre arts. See the specific department for credit requirements.

Master of Music

The M.Mus. degree, depending on the concentration selected, requires a thesis, public graduate recitals, or a final project. No credit is granted for the final project in a non-thesis degree plan and the project is subject to approval of the supervisory committee. Both written and oral non-thesis requirements must be met in all degree options. Of the minimum 30 credits required for the degree, at least 18 must be in courses in the School of Music at the 500 level; the remainder may include 400 level courses in the School of Music and 300 or 400 level courses in other areas.

Master of Natural Resources

The M.N.R. program provides broad-based, advanced training in natural resource management and administration. The M.N.R. degree requires 30 semester credits beyond the bachelor's degree. Only courses at the 400 or 500 level counts toward the degree. At least 18 of the 30 credits must be at the 500 level. A comprehensive non-thesis requirement must be met.

Master of Public Administration

The M.P.A. program includes thesis and non-thesis options. Of the minimum 36 credits required for the degree, at least 18 must be in courses selected from prescribed core areas and 12 in designated optional areas of emphasis as described in the Department of Political Science section of this catalog; at least 18 of the 36 credits must be in courses at the 500 level. A public service internship is required of students with no appropriate work experience. For the thesis student, a thesis is required. For the non-thesis student, a non-thesis requirement must be met.

Master of Science

In some fields, all candidates for the M.S. degree are required to present a thesis; in others the thesis is optional or not required. Consult the departmental section for specific descriptions. Of the minimum 30 credits required for the degree, at least 18 credits must be at the 500 level; the remainder may include 400 level courses in the major, and 300 or 400 level courses in supporting areas. For the thesis student, a thesis is required. For the non-thesis student, a non-thesis requirement must be met.

Master of Science in Athletic Training

The M.S.A.T. is a non-thesis degree with a minimum of 88 credits at the 500-level required. Students may be admitted to the program through two methods: either by admission after completion of a bachelor's degree from a regionally accredited institution or by early admission after the completion of the junior year in the UI Athletic Training track in Exercise Science and Health (B.S.P.E.) or by completion of the junior year in an approved program at an institution with an articulated agreement with UI.

Students offered early admission to the graduate program must meet all admissions and prerequisite course work requirements for the Master of Science in Athletic Training degree, as well as all undergraduate requirements excluding the first 30 credits of the graduate program. Upon successful completion of the first 30 graduate credits, students may use these credits in transfer towards their undergraduate degree

requirements. There is a professional fee for the M.S.A.T. program; consult the program coordinator for details.

Professional Science Master

Contact the Director of the Program in Environmental Science (p. 302) for information regarding this degree. Of the minimum 35 credits required for the degree, at least 26 credits must be at the 500 level; the remainder may include 400 level courses. This is a non-thesis program.

Education Specialist Degrees

The University of Idaho awards the degree of Education Specialist to students who want an organized program of graduate studies beyond the master's degree but who may not wish to pursue a doctoral program. The Education Specialist degree is delivered only by the College of Education.

Requirements for Education Specialist Degree

Credit Requirements

An acceptable program of at least 60 upper-division and graduate level semester credits beyond the bachelor's degree is required. Additional credits may be required for those who have master's degrees in other areas of emphasis or who have deficiencies. Credits listed on an undergraduate transcript, professional development courses, or courses on a professional degree transcript are not available to be used toward a specialist degree. No more than three credits of workshop or workshop-related courses may be used toward a specialist degree. Thesis or dissertation credits cannot be used towards a specialist degree. Each student, following advising, will submit the study plan for approval to the major professor, the appropriate program administrator, and the dean of the College of Graduate Studies for approval.

Transfer, Correspondence Study, and Non-degree Credit Limitation

No more than 12 of the last 30 credits may be taken as transfer courses, correspondence courses (with prior written approval of the dean of the College of Graduate Studies), or non-degree courses. Transfer credits must be from institutions offering graduate programs in the discipline(s) of the course(s) being transferred. All credits used toward graduate degrees must be from regionally accredited American institutions or from non-US institutions recognized by the appropriate authorities in their respective countries.

Time Limit

The last 30 credits must have been taken in the eight years preceding the semester in which the degree is awarded.

Procedures for Education Specialist Degree

See the General Graduate Regulations section regarding appointment of major professor, study plans, application for advanced degree, final semester registration, and non-thesis requirement.

Doctoral Degrees

The University of Idaho awards the degree of Doctor of Philosophy in recognition of high achievement in scholarly and research activity. The degree of Doctor of Education is granted for high scholarly attainment and in recognition of the completion of academic preparation for professional practice. See Procedures for Doctor of Philosophy and Doctor of Education Degrees for more details. The Doctor of Athletic Training is offered through the College of Education and the Department of Movement Sciences. See Procedures and Requirements Specific to the Doctor of Athletic Training for more details.

The major professor and program offering a particular doctoral program indicate the general philosophy of the degree program, the objectives of courses and seminars, the research specialties available, and requirements unique to the department. Admission to the doctoral program is granted only to those who have a recognized potential for completing the degree.

Requirements for Doctoral Degrees

Credit Requirements

For the Ph.D. and Ed.D., a minimum of 78 credits beyond the bachelor's degree is required; of these, at least 52 credits must be at the 500 level or above and at least 33 of the 78 credits must be in courses other than 600 (Doctoral Research and Dissertation). A maximum of 45 credits in dissertation and 5 credits of 599 (Non-thesis Research) may be used toward the degree. For the D.A.T., a minimum of 66 credits are required (including all dissertation work). Courses numbered below 300 may not be used to fulfill the requirements for a doctoral degree; courses numbered 300-399 may be used only in supporting areas. Individual programs may require additional course work. Applicants having a doctoral degree may obtain a second doctoral degree subject to the approval of the Graduate Council. The Graduate Council will establish the requirements for the second degree.

Credit Limitations for Transfer, Correspondence Study, and Non-degree

For the Ph.D. and Ed.D. degrees, a student must complete at least 39 of the 78 required credits at UI while matriculated in the College of Graduate Studies. Credits can be transferred to UI, with the consent of the student's major professor, the committee (if required by the program), the program's administrator, and the dean of the College of Graduate Studies. Credits can be transferred only if the institution from which the credits are being transferred has a graduate program in the course's discipline. All credits used toward graduate degrees must be from regionally accredited American institutions or from non-US institutions recognized by the appropriate authorities in their respective countries. Transfer credits are subject to all other College of Graduate Studies rules and regulations. Correspondence study courses may be applied to the degree only with the prior written approval of the College of Graduate Studies. Courses used toward an undergraduate degree, professional development courses, and courses on a professional development transcript are not available to be used toward a doctoral degree.

Time Limits

Of the credits submitted to satisfy the requirements for a Ph.D. or Ed.D. degree, a maximum of 30 may be more than eight years old when the degree is conferred, provided the student's committee and program administrator determine that the student has kept current in the subjects concerned. Graduation must occur no later than five years after the date on which the candidate passed his or her preliminary or general examination. These time limitations can be extended only on recommendation of the committee and approval by the Graduate Council.

Awarding Doctoral Degrees to Members of the Faculty

Regulations are outlined in Section 4920 of the Faculty-Staff Handbook.

Particular Requirements for the Ed.D. Degree

A period of professional practice is required for the Doctor of Education degree; the period involved is determined by the student's supervisory committee. While the Ed.D. is a College of Education degree, you should consult with the departments in the College of Education to learn of specific emphasis requirements.

Procedures for Doctor of Philosophy and Doctor of Education Degrees

Appointment of Major Professor and Committee

Refer to the "Appointment of Major Professor and Committee for All Degree Seeking Graduate Students" in the preceding General Graduate Regulations section. In addition, a doctoral supervisory committee consists at least of four people: the major professor as chair and at least one additional UI faculty member from the program, the balance of the committee may be made up of faculty members from a minor or supporting area, and faculty members from a discipline outside the major. If the committee has a co-chair the minimum number of committee members is five.

Qualifying Examination

The qualifying examination is a program option and serves to assess the background of the student in both the major and supporting fields and to provide partially the basis for preparation of the student's study program. A particular program may or may not require a master's degree as a prerequisite for the qualifying evaluation. As soon as the program's qualifications are met, a supervisory committee is appointed.

Preparation of Study Plan

Refer to the "Preparation and Submission of Study Plan (p. 232)" in the preceding General Graduate Regulations section.

Preliminary Examination for Ph.D. Degree

The preliminary examination should be scheduled only after the student has completed the majority of the courses on his or her study plan. The student is required to be registered during the semester the preliminary examination is taken. The student's committee certifies to the College of Graduate Studies the results of the preliminary examination and if passed, the student is advanced to candidacy. Graduation must occur no later than five years after the date on which the candidate passed his or her examination. If the preliminary examination is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months or more than one year following the first attempt. If a student fails the preliminary examination a second time, or the program does not allow the student to repeat the examination after the first failure or the student does not retake the examination within one year, the student is automatically moved to unclassified enrollment status and is no longer in the degree program.

General Examination for Ed.D . Degree

When the student approaches the end of his or her course work, has completed the professional experience requirement and has outlined the dissertation subject in detail, the supervisory committee approves the holding of the general examination. The student is required to be registered during the semester the general examination is taken. The examination is both written and oral and is intended to assess progress toward degree objectives. The student's committee certifies to the College of Graduate Studies the results of the general examination and if passed, the student is advanced to candidacy. Graduation must occur no later than five years after the date on which the candidate passed his or her examination. If the general examination is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months or more than one year following the first attempt. If a student fails the general examination a second time, or the program does not allow the student to repeat the examination after the first failure or the student does not retake the examination within one year, the student is automatically moved to unclassified status and is no longer in the degree program.

See the General Graduate Regulations (p. 232) section regarding application for advanced degree, registration requirements, final defense and dissertation requirements.

Procedures for Doctor of Athletic Training

The Culminating Clinical Project

Students enrolled in the Doctor of Athletic Training (D.A.T.) will engage in research projects during the curricular phase of the program. These project(s) will lead to at least two publication ready manuscripts and all students must meet professional authorship requirements (regardless of order). See Department of Movement Sciences and Doctor of Athletic Training webpages for more information.

The Team (Committee)

All D.A.T. project team committees will have at least four committee members: two members of the athletic training faculty (all with graduate faculty status), the student's Attending Clinician (who is the student's on-site mentor during the student's residency), and an expert in the student's chosen area of clinical research. The AT faculty members will always chair the CCP, provide research guidance, and serve as the experts in the development of advanced practice in Athletic Training. A situation may arise in which one or both of the members of the committee that are outside of the AT program faculty may have a degree less than that of which the student is seeking, however, the intent of the third and fourth D.A.T. committee membership is to provide outside validation of the student's progress toward advanced practice and clinical utility of action research studies.

Culminating Clinical Project Hours

These dissertation hours may be used in instances when the CCP has not been successfully completed and the curricular phase of program has been completed.

COLLEGE OF LAW

Jerrold A. Long, Dean; David Pimentel, Associate Dean for Faculty Development; Jeffrey A. Dodge, Associate Dean for Students, Academic Affairs and Administration; Stephen Miller, Associate Dean for Faculty Development (101 Law Bldg.; 208/885-4977).

The College of Law was organized in 1909 and is the only accredited law school in the state of Idaho. The College is a member of the Association of American Law Schools and is fully accredited by the American Bar Association.

Purpose of the College

The role of the College of Law is to educate students for the legal profession with its many facets and its involvement in the whole range of society and to prepare students to engage in law-related endeavors in business, government and non-governmental organizations. The curriculum is designed to provide instruction over three academic years in principles generally applicable in the United States and international courts. The responsibilities assumed by professionals are emphasized, as are solutions to ethical problems. The study of law is also an asset to those who wish to hold positions of leadership in government, business or non-profit organizations.

Methods of instruction are adapted to the development of each student's highest potential and vary with the professor and the course. Teaching and learning approaches that encourage individual initiative and develop perception and communication abilities are emphasized. Practical Skills education is emphasized throughout the curriculum. Students are also required to participate in volunteer, law-related service as a condition of graduation. Because law changes rapidly, mere accumulation of information is subordinated to the more important ends of individual development and training in critical habits of thought.

Admission to the Bar

The College of Law is fully accredited by the American Bar Association and is a member of the Association of American Law Schools, and its degree is accepted by all state bar associations. Educational prerequisites vary among states, and the secretary of the bar examiners in the state in which the applicant intends to practice should be contacted to determine the existence of special requirements.

Suggestions for Pre-legal Study

The subject matter of pre-legal education is less important than the quality of work performed. Although the most common pre-law majors are English, social sciences, or business, law students are drawn from a broad range of undergraduate programs from agriculture and engineering to English and philosophy. The study of law requires logical analysis and effective written and oral communication. Any rigorous course of study that develops these skills is good preparation for law school. Beyond this, a well-rounded education is best. American government and western political philosophy are important in public law; economic and accounting concepts are basic to much business and commercial law; history, literature, philosophy, and psychology all provide useful insights into cultural tradition and human motivation that are important to the interpretation and application of law.

Most universities have a pre-law advisor, often through the Political Science Department, to advise students in selecting appropriate pre-law courses. At Idaho, a pre-law advisor is available through the Political Science Department to guide students in selecting courses within the particular college or university that will meet these objectives. The Admissions Office at the College of Law is also available for general consultation in program planning.

3+3 Program

The American Bar Association's accreditation standards permit law schools to enroll students still in the process of completing their baccalaureate degrees so long as it will be completed by the end of the first year in the Juris Doctor degree. As a result of this standard, many law schools have 3+3 programs that allow undergraduate students, with the permission of their major advisor, to count up to 30 credits of the first year law curriculum toward the completion of the baccalaureate degree. A qualified student would complete three years of the baccalaureate degree and finish the remaining credits through the courses in the first year curriculum of the law degree. The law degree takes three years to complete, thus the 3+3 program title. The combined curriculum takes a year off a of student's schooling.

The conditions that must be met for a 3+3 degree student to receive serious consideration from the College of Law Admissions Committee are:

1. demonstration of outstanding ability by a cumulative grade point average at the most recently entered class median or higher, currently a 3.24 GPA;
2. demonstration of excellent aptitude for law study by a score on the LSAT at the most recently entered class median or higher, currently a 152; and
3. submission of a letter from the undergraduate major department attesting to the fact that the applicant will receive the baccalaureate degree after the successful completion of up to 30 credits of law study.

Application for Admission

Admission Requirements

Applicants for admission must have a bachelor's degree from an accredited four-year college or university by the date of enrollment at the College of Law. In special cases, it may be possible to be admitted after three years of undergraduate study: contact the College of Law for more information. Applicants must also arrange for a complete Law School Data Assembly Service (LSDAS) report, which consists of a Law School Admission Test (LSAT) score, copies of transcripts, and other relevant information.

Arrangements for taking the LSAT must be made by the individual applicant directly with the Law School Admission Council (LSAC) well in advance of the dates set for the LSAT. The dates and places for the test, application forms, and a bulletin of information about the test may be obtained by writing directly to LSAC, 662 Penn St., Newtown, PA 18940, by calling LSAC at 215-968-1001, or on their web site at www.lsac.org (http://www.lsac.org). This information may also be obtained from the pre-law advisor of most colleges and universities.

Commercial materials on the LSAT are available at most bookstores, and LSAT preparation courses may be found in many locations. Applicants are advised to study for the test ahead of time. Old LSAT scores are acceptable as long as an LSDAS Report can be assembled by the testing service.

Registration with the LSDAS is required of all applicants. Instructions on registration for the LSDAS report and an application form for the purpose are contained in the same bulletin that describes the LSAT. Applicants should accomplish this registration at the same time they register for the LSAT. **It is the applicant's responsibility to assure that LSDAS has all required information and that the applicant's LSDAS Report is complete for release to the College of Law.** Be advised that it may take up to six weeks for an LSDAS Report to reach the College of Law.

Application Deadline

While the College of Law considers applications upon completion, all required admission credentials listed below should be postmarked no later than **February 15** to be assured timely consideration for admission in the fall. The College of Law will request an LSDAS Report from LSAC on receipt of an application and application fee. The college is unable to consider the application until an LSDAS Report has been received. This requires applicants to take the LSAT no later than the preceding December. However, in order to assure timely application, the October LSAT, almost a year before admission, is recommended. The college cannot be responsible for delays in the mail or at the LSDAS.

Decision on Admission

Admissions decisions are made by a faculty committee. The college receives many more applications than it can accept. Consequently, the Admissions Committee must deny admission to many who are qualified to study law. In general, offers of admission are extended to those judged to present the greatest promise for success in law school. Matters relating to character are also considered in the admissions process.

Although undergraduate grade point average and LSAT scores are the most important factors used to arrive at this judgment, the committee will consider any additional information that an applicant believes is important in assessing his or her ability to perform law school work. A personal statement often provides insight into an applicant's motivation for attending law school, as well as functioning as a sample of writing ability, and is probably the most helpful additional item for most applicants. Graduate work and/or work experience may provide evidence of achievement and capabilities inadequately addressed by standard credentials. Letters of recommendation and prior written work may also help in assessing an applicant's relative promise. Letters of recommendation should be limited to three, and should address the applicant's ability to engage in critical analysis and to communicate orally and/or in writing. The cultural and socioeconomic background of applicants is also considered to ensure the College of Law remains open to all students, as well as provides an environment in which diverse viewpoints are represented.

As a state-supported institution, the College of Law extends a preference to timely applicants who are Idaho residents. It is possible to establish Idaho residency for tuition purposes either prior to or after enrolling at the College of Law. Residency determinations are made by the University of Idaho Registrar's Office; inquiries about residency should accordingly be directed to that office at 208-885-6731.

Admission to the College of Law is very competitive. The median undergraduate grade point average for enrolled students is typically around 3.40, and the median LSAT score was 152 for the Class of 2016. Statistics for the current year can be found at www.uidaho.edu/law/admissions.

Every effort is made to notify timely applicants of a decision by early April. A small percentage of applicants may be placed in the "standby pool" and may not receive a final decision until late summer, subject to space available in the incoming class.

Upon acceptance, a $500 deposit is required to secure a place in the fall entering class. This deposit will be applied to student fees upon registration. In cases of special need, the deposit may be waived.

Transfers from Other Schools

Space in each law school class is limited. Therefore, only a few transfers into the second year class can be accommodated. Special standards apply, and within these standards, a degree of preference is extended to residents of Idaho. Students transferring into our program are expected to complete at least three semesters at Idaho. Students desiring to study here for a lesser period should arrange to have credits at Idaho accepted toward a degree from the law college in which they are currently enrolled. Before a transfer applicant is considered, we must have a final transcript of all work that will have been undertaken at other law schools on file by the time of transfer. We also require a letter from the dean or associate dean following the completion of all such work that states that the applicant remains in good standing, is eligible to continue without any condition or qualification, and ranks in the top 50 percent of his or her law school class. Consequently, for an applicant currently enrolled in a law school, no decision on transfer will be possible until June or later, when all grades from current work are available. If an applicant attends a summer session of a school of law, it will not be possible to process a final acceptance until the close of the summer session. If an applicant needs some guidance before results of his or her spring semester's work become available, a tentative opinion about probable admissibility may be given.

Non-degree Candidates

Students who are not degree candidates in the College of Law but are enrolled elsewhere at the University of Idaho are permitted to register for law courses if they receive permission from both the course instructor and the Associate Dean of Students and Administration. Such courses cannot be credited toward a law degree even if the student is later admitted to the College of Law.

Fees

See the section on "Fees and Expenses (p. 62)".

Grading System

Grades for courses taken in the College of Law shall be awarded on the basis of A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F; provided, however, that by resolution the law faculty may designate any course, or courses, to be graded on a pass-fail or pass-no pass basis. Any approved course work taken at any other law school will be recorded on the transcript as a "P," if the student earned a "C" or better in that course. No credit will be awarded for work done at another law school if the student earned less than a grade of "C." Up to 6 credit hours of UI graduate level courses may be taken with special permission of the associate dean. Credits will be recorded as "P" for course work in which the student earns a "B" or better. Grades of "P" are not included in calculating a student's grade-point average or class ranking in the College of Law. Exceptions to the above may be made for UI graduate level courses used in the approved UI law/graduate concurrent degree programs.

Grade-point averages of students in the College of Law shall be computed by assigning the following numerical point values per semester hours: A = 4.00; A- = 3.67; B+ = 3.33; B = 3.00; B- = 2.67; C+ = 2.33; C = 2.00; C- =

1.67; D+ = 1.33; D = 1.00; D- = 0.67; F (or "fail" under the pass-fail basis) = 0.00. The cumulative grade-point average is the quotient of total points assigned, divided by total hours undertaken. Courses in which marks of I, W, P (pass) or NP (no pass) have been given shall be disregarded in the computation. All course grades shall be included on the transcript and (except for marks of I, W, P or NP) in the calculation of the grade-point average, even if courses have been repeated. (For further information about repeating courses, see below.)

This grading system applies in determining:

1. eligibility for continuing study in the College of Law;
2. compliance with requirements for the Juris Doctor degree; and
3. class ranking within the College of Law.

Grades in most courses offered by the College of Law are awarded on the basis of performance in a single written examination conducted at the end of the semester. In courses where it is so announced, grades on written projects or classroom participation may be included.

Unless arranged in advance by the professor, students receiving an "incomplete" grade for a course must remove that grade within six weeks after the first day of classes of the following fall or spring semester. Incompletes not made up before that date automatically revert to the grade indicated by the professor as the "permanent" grade, usually an "F." The grade ultimately given will be computed in the GPA for the semester in which the class was begun.

Repeating Courses for Credit

A student who has completed a law school course in which s/he has received a grade of C-, D+, D, or D- may repeat that law school course once (the "repeated course"), subject to the following conditions:

1. The credit hours earned by the student upon completion of the repeated course shall appear on the law school transcript, but shall not be applied toward the total number of required credit hours for award of the Juris Doctor degree by the College of Law.
2. The grade earned by the student upon completion of the repeated course shall appear on the student's law school transcript, but shall not be calculated as part of the student's law school grade point average.

Repeating Failed Courses

1. A student who has completed a law school course in which s/he has received a grade of F (the "failed course") shall receive no credit hours for application toward the total number of required credit hours for award of the Juris Doctor degree by the College of Law, but the grade shall be calculated as part of the student's law school grade point average.
2. If the failed course is a course required for graduation the student must repeat the course and receive a grade above an F, in order to satisfy the graduation requirements. If the failed course is not required for graduation, the student may repeat the course one time only. If a student repeats a failed course and passes the course, the credit hours and grade received in the repeated course shall be treated as follows:
   a. The credit hours earned by the student upon completion of the repeated course shall appear on the law school transcript and shall be applied toward the total number of required credit hours for award of the Juris Doctor degree by the College of Law.
   b. The grade earned by the student upon completion of the repeated course shall appear on the student's law school transcript, but shall not be calculated as part of the student's law school grade point average.

Concurrent Degrees

Concurrent Degrees (M.Acct./M.S./P.S.M./Ph.D.) and other Graduate-Level Courses

Graduate-level courses used toward an approved concurrent law degree must be approved by the College of Law. Grades and credits earned in these approved graduate courses will not be calculated in the student's institutional College of Law GPA or College of Law class ranking.

The University of Idaho currently offers the following concurrent programs:

- J.D./M.Acct. - Accounting
- J.D./M.P.A. - Public Administration
- J.D./M.S. - Bioregional Planning and Community Design
- J.D./M.S. - Environmental Science
- J.D./M.S. - Water Resources
- J.D./Ph.D. - Water Resources
- J.D./P.S.M. - Natural Resources and Environmental Science

For information on the concurrent J.D./M.Acct. see the Accounting (p. 157) section. For information on the concurrent J.D./M.S., J.D./P.S.M., and J.D./Ph.D. degrees, see the Program in Environmental Science (p. 302) section, Program in Bioregional Planning and Community Design (p. 154) section, or the Program in Water Resources (p. 137) section. For information on the concurrent J.D./M.P.A., see the D (p. 286)epartment of Politics and Philosophy (p. 283) section. UI graduate-level courses will be recorded on the law student's academic record as a comment only.

For the concurrent J.D./M.Acct., J.D./M.S., and J.D./Ph.D. degrees, a student will be required to complete both degrees for the College of Law to count twelve credits towards the J.D. degree. If a student fails to receive the M.Acct., M.S. or Ph.D. degree a maximum of six semester credits earned in the M.Acct., M.S., or Ph.D. program may count towards the J.D. degree with the approval of the College of Law associate dean. Information on the JD/MBA Concurrent degree program offered in cooperation with Washington State University, please contact the College of Law.

Additional Information

For detailed information about the College of Law, see the College of Law Catalog or visit their website, www.uidaho.edu/law.

Law (J.D.)

Required course work includes the College of Law requirements and the following:

Code	Title	Hours
LAW 805	Civil Procedure & Intro to Law	2
LAW 806	Civil Procedure II	3
LAW 807	Property	4
LAW 809	Torts	4
LAW 812	Criminal Law	3
LAW 813	Contracts	2

LAW 814	Contracts II	3
LAW 815	Legal Writing and Analysis	0-5
LAW 816	Constitutional Law I	3
LAW 821	Legal Research	1
LAW 905	Constitutional Law II	3
LAW 907	Administrative Law	3
LAW 919	Business Associations	4
LAW 950	Evidence	3
LAW 962	Professional Responsibility	3
Select 6 credits from the following experiential learning courses:		6
LAW 855	Water Law Practicum	
LAW 917	Negotiation and Appropriate Dispute Resolution	
LAW 932	Estate Planning	
LAW 958	Trial Advocacy	
LAW 971	Lawyering Process Seminar	
LAW 974	Legal Aid Clinic	
LAW 975	Classroom Credit Public Service Externship	
LAW 978	Entrepreneurship Law Clinic	
LAW 986	Judicial Clerkship Seminar	
LAW 991	Skill Practicum	
LAW 994	Economic Development Clinic	
LAW 995	Main Street Law Clinic	
LAW 996	Immigration Litigation & Appellate Clinic	
LAW 997	Mediation Clinic	
LAW 998	Tax Clinic	
Satisfaction of the Upper-Division Writing Requirement through Law Review, or a Directed Study, or particular designated courses each year		
50 Hours of uncompensated law related pro bono service		
Total Hours		47-52

Courses to total 90 credits for this degree.

Students may choose to complete one of the following four emphases. To complete a J.D. with any of the listed emphases a student must complete the above general J.D. requirements and the requirements of one of the emphases.

A. Business Law and Entrepreneurship Emphasis

Students pursuing this emphasis must earn a minimum grade of 'C' in each course taken to satisfy Business Law & Entrepreneurship emphasis requirements, plus a cumulative 2.50 grade point average over all courses used to satisfy Business Law & Entrepreneurship emphasis requirements.

Code	Title	Hours
LAW 919	Business Associations	4
LAW 925	Property Security	3
LAW 930	Taxation	3-4
Select one paper class from the following:		4
LAW 981	Critical Legal Studies Journal	
LAW 982	Law Review	
LAW 983	Directed Study	
Select one skills class from the following:		2-3
LAW 912	Civil Mediation	
LAW 917	Negotiation and Appropriate Dispute Resolution	
LAW 932	Estate Planning	
LAW 978	Entrepreneurship Law Clinic	
LAW 994	Economic Development Clinic	
LAW 998	Tax Clinic	
Select one of the following groups of courses:		12
Group A, Commercial Law Track		
LAW 923	Payment Systems	
LAW 924	Sales	
Select 6 credits from the following:		
LAW 854	Corporate Taxation	
LAW 907	Administrative Law	
LAW 926	Bankruptcy	
LAW 927	Partnership and LLC Taxation	
LAW 984	Real Estate Transactions	
Group B, Enterprise Organization Track		
Select 12 credit from the following:		
LAW 851	Advanced Torts	
LAW 854	Corporate Taxation	
LAW 903	Introduction to Intellectual Property	
LAW 907	Administrative Law	
LAW 908	Workplace Law	
LAW 910	Antitrust	
LAW 920	Securities Regulation	
LAW 921	Accounting for Lawyers	
LAW 922	Trademarks and Trade Dress	
LAW 924	Sales	
LAW 927	Partnership and LLC Taxation	
LAW 984	Real Estate Transactions	
LAW 992	White Collar Crime	
Group C, Intellectual Property and Technology Law Track		
LAW 903	Introduction to Intellectual Property	
Select two from the following:		
LAW 922	Trademarks and Trade Dress	
LAW 931	Patents	
LAW 980	Copyrights	
Select 5 credits from the following:		
LAW 907	Administrative Law	
LAW 910	Antitrust	
LAW 918	Internet Law	
LAW 922	Trademarks and Trade Dress	
LAW 931	Patents	
LAW 980	Copyrights	
LAW 989	Mass Media Law	
Total Hours		28-30

Courses to total 90 credits for this degree

B. Litigation and Alternative Dispute Resolution Emphasis

Students pursuing this emphasis must earn a minimum grade of 'C' in each course taken to satisfy Litigation & Alternative Dispute Resolution emphasis requirements, plus a cumulative 2.50 grade point average over

all courses used to satisfy Litigation & Alternative Dispute Resolution emphasis requirements.

Code	Title	Hours
LAW 917	Negotiation and Appropriate Dispute Resolution	3
LAW 950	Evidence	3
Select one trial skills course from the following:		2-3
LAW 954	Trial Skills	
LAW 958	Trial Advocacy	
Select one mediation course from the following:		2
LAW 912	Civil Mediation	
LAW 913	Family Mediation	
Select one skills course from the following:		1-5
LAW 956	Moot Court	
LAW 957	Mock Trial	
LAW 973	Non-Classroom Credit Public Service Externship	
LAW 974	Legal Aid Clinic	
LAW 975	Classroom Credit Public Service Externship	
LAW 976	Semester in Practice	
LAW 995	Main Street Law Clinic	
LAW 996	Immigration Litigation & Appellate Clinic	
LAW 997	Mediation Clinic	
LAW 998	Tax Clinic	
Select 10 credits from the following: [1, 2]		10
LAW 904	Federal Courts	
LAW 907	Administrative Law	
LAW 914	Dispute Resolution	
LAW 916	Public International Law	
LAW 940	International Human Rights	
LAW 952	Remedies	
LAW 953	Criminal Procedure: Investigations	
LAW 955	Appellate Advocacy Program	
LAW 960	Conflict of Laws	
LAW 966	Legal Drafting	
LAW 967	Advanced Legal Writing	
LAW 970	Advanced Legal Research	
LAW 971	Lawyering Process Seminar	
LAW 974	Legal Aid Clinic	
LAW 975	Classroom Credit Public Service Externship	
LAW 976	Semester in Practice	
LAW 977	Clinical Lab	
LAW 985	Immigration Law and Policy	
LAW 995	Main Street Law Clinic	
LAW 996	Immigration Litigation & Appellate Clinic	
LAW 997	Mediation Clinic	
LAW 998	Tax Clinic	
Total Hours		21-26

1 A minimum of one doctrinal course in LAW 904, LAW 907, LAW 916, LAW 940, LAW 952, LAW 953, LAW 960, or LAW 985 is required.

2 A minimum of one practice course in LAW 914, LAW 955, LAW 966, LAW 967, LAW 970, LAW 971, LAW 974, LAW 975, LAW 976, LAW 977, LAW 995, LAW 996, LAW 997, or LAW 998 is required.

Courses to total 90 credits for this degree

C. Native American Law Emphasis

Students pursuing this emphasis must earn a minimum grade of 'C' in each course taken to satisfy Native American Law emphasis requirements, plus a cumulative 2.50 grade point average over all courses used to satisfy Native American Law emphasis requirements.

Code	Title	Hours
LAW 949	Native American Law	3
LAW 928	Tribal Nation Economics and Law	3
or LAW 979	Native American Natural Resource Law	
Select one of the following Tracks:		6
Economics Development Track [1]		
Select 6 credits from the following:		
LAW 903	Introduction to Intellectual Property	
LAW 907	Administrative Law	
LAW 908	Workplace Law	
LAW 910	Antitrust	
LAW 919	Business Associations	
LAW 921	Accounting for Lawyers	
LAW 923	Payment Systems	
LAW 925	Property Security	
LAW 926	Bankruptcy	
LAW 927	Partnership and LLC Taxation	
LAW 930	Taxation	
LAW 931	Patents	
LAW 932	Estate Planning	
LAW 945	Community Property	
LAW 984	Real Estate Transactions (Max 3 credits)	
Family Law Track [1]		
Select 6 credits from the the following:		
LAW 913	Family Mediation	
LAW 940	International Human Rights	
LAW 941	Wills, Estates, and Trusts	
LAW 963	Family Law	
LAW 964	Children and the Law	
LAW 965	Elder Law	
LAW 985	Immigration Law and Policy	
Governance Track [1]		
Select 6 credits from the following:		
LAW 904	Federal Courts	
LAW 907	Administrative Law	
LAW 908	Workplace Law	
LAW 912	Civil Mediation	
LAW 916	Public International Law	
LAW 917	Negotiation and Appropriate Dispute Resolution	
LAW 934	Land-Use Law and Planning	
LAW 959	Critical Legal Studies	
LAW 960	Conflict of Laws	
Natural Resource Management Track [1]		
Select 6 credits from the following:		
LAW 906	Natural Resource Law Seminar	
LAW 934	Land-Use Law and Planning	

LAW 937	Wildlife Law and Policy	
LAW 938	International Environmental and Water Law	
LAW 939	Law, Science, and the Environment	
LAW 942	Water Law I	
LAW 946	Water and Energy Policy Seminar	
LAW 947	Environmental Law	
LAW 948	Public Lands and Resources Law	
LAW 951	Environmental Policy	
LAW 969	Water Law II	
Self Directed Track [1]		
Six credits in courses pre-approved by the Native American Law Advisor emphasis advisor		
Total Hours		12

Courses to total 90 credits for this degree

[1] Students must complete one of these tracks. Substitution from UI and WSU graduate courses allowed for one course in each track with pre-approval of Native American Law Emphasis Advisor.

D. Natural Resources and Environmental Law Emphasis

Students pursuing this emphasis must earn a minimum grade of 'C' in each course taken to satisfy Natural Resources and Environmental Law emphasis requirements, plus a cumulative 2.50 grade point average over all courses used to satisfy Natural Resources and Environmental Law emphasis requirements.

Code	Title	Hours
LAW 907	Administrative Law	3
LAW 971	Lawyering Process Seminar	2
Select 10 credits from the following:		10
LAW 852	Natural Resource and Environmental Law Field Course	
LAW 855	Water Law Practicum	
LAW 906	Natural Resource Law Seminar	
LAW 934	Land-Use Law and Planning	
LAW 937	Wildlife Law and Policy	
LAW 938	International Environmental and Water Law	
LAW 939	Law, Science, and the Environment	
LAW 942	Water Law I	
LAW 946	Water and Energy Policy Seminar	
LAW 947	Environmental Law	
LAW 948	Public Lands and Resources Law	
LAW 951	Environmental Policy	
LAW 969	Water Law II	
LAW 979	Native American Natural Resource Law	
LAW 994	Economic Development Clinic	
WR 506	Interdisciplinary Methods in Water Resources	
Total Hours		15

Courses to total 90 credits for this degree

Law (LL.M.)

Required course work includes the College of Law requirements and one of the following emphases:

Code	Title	Hours
LAW 857	Introduction to American Law and Legal Education	3
Emphases		
Select one of the following:		
Democracy, Justice, and the American Legal System (p. 246)		
Natural Resources and Environmental Law (p. 246)		
Business Law and Entrepreneurship (p. 247)		
Litigation and Alternative Dispute Resolution (p. 247)		

A. Democracy, Justice, and the American Legal System

Code	Title	Hours
LAW 856	Legal Writing and Research for LL.M. Students	3
LAW 962	Professional Responsibility	3
Select 6 credits of the following:		6
LAW 805	Civil Procedure & Intro to Law	
LAW 806	Civil Procedure II	
LAW 807	Property	
LAW 809	Torts	
LAW 812	Criminal Law	
LAW 813	Contracts	
LAW 816	Constitutional Law I	
LAW 851	Advanced Torts	
LAW 905	Constitutional Law II	
LAW 919	Business Associations	
LAW 924	Sales	
LAW 925	Property Security	
LAW 949	Native American Law [1]	
LAW 950	Evidence	
LAW 953	Criminal Procedure: Investigations	
LAW 960	Conflict of Laws	
LAW 963	Family Law	
Total Hours		12

[1] LAW 949 Native American Law Native American Law (3 cr) can satisfy requirements for the LL.M. degree, but cannot be counted by students seeking to sit for a bar exam.

Courses to total 24 credits for this degree

B. Natural Resources and Environmental Law

Code	Title	Hours
LAW 907	Administrative Law	3
LAW 947	Environmental Law	3
or LAW 948	Public Lands and Resources Law	
Select 10 credits of Natural Resources and Environmental Law lectives from the following: [1]		10
LAW 855	Water Law Practicum	
LAW 906	Natural Resource Law Seminar	
LAW 934	Land-Use Law and Planning	
LAW 937	Wildlife Law and Policy	
LAW 938	International Environmental and Water Law	
LAW 939	Law, Science, and the Environment	
LAW 946	Water and Energy Policy Seminar	
LAW 947	Environmental Law	

LAW 948	Public Lands and Resources Law	
LAW 951	Environmental Policy	
LAW 969	Water Law II	
LAW 971	Lawyering Process Seminar	
LAW 979	Native American Natural Resource Law	
WR 506	Interdisciplinary Methods in Water Resources	
Total Hours		16

Courses to total 24 credits for this degree

[1] *Up to 3 credits may be satisfied by non-law graduate courses with approval of both the NREL and LL.M. emphasis advisor.*

C. Business Law and Entrepreneurship

Code	Title	Hours
LAW 813	Contracts	2
LAW 919	Business Associations	4
LAW 924	Sales	3
or LAW 925	Property Security	
Select 9 credits of Business Law and Entrepreneurship electives from the following:		9
LAW 851	Advanced Torts (Max 3 credits)	
LAW 854	Corporate Taxation (Max 3 credits)	
LAW 903	Introduction to Intellectual Property	
LAW 907	Administrative Law	
LAW 908	Workplace Law	
LAW 910	Antitrust	
LAW 918	Internet Law	
LAW 920	Securities Regulation	
LAW 921	Accounting for Lawyers	
LAW 922	Trademarks and Trade Dress	
LAW 923	Payment Systems	
LAW 924	Sales	
LAW 925	Property Security	
LAW 926	Bankruptcy	
LAW 927	Partnership and LLC Taxation (Max 3 credits)	
LAW 930	Taxation (Max 4 credits)	
LAW 931	Patents	
LAW 980	Copyrights (Max 3 credits)	
LAW 984	Real Estate Transactions (Max 3 credits)	
LAW 989	Mass Media Law	
LAW 992	White Collar Crime	
Total Hours		18

Courses to total 24 credits for this degree

D. Litigation and Alternative Dispute Resolution

Code	Title	Hours
Select one of the following tracks:		15
General Track:		
LAW 907	Administrative Law	
LAW 917	Negotiation and Appropriate Dispute Resolution	
LAW 912	Civil Mediation	
or LAW 913	Family Mediation	
Litigation and Alternative Dispute Resolution Electives:		
LAW 816	Constitutional Law I	
LAW 905	Constitutional Law II	
LAW 950	Evidence	
LAW 952	Remedies	
LAW 971	Lawyering Process Seminar	
Criminal Law Track		
LAW 812	Criminal Law	
LAW 917	Negotiation and Appropriate Dispute Resolution	
LAW 953	Criminal Procedure: Investigations	
LAW 912	Civil Mediation	
or LAW 913	Family Mediation	
Criminal Law Elective		
Select one course from the following:		
LAW 816	Constitutional Law I	
LAW 901	Seminar [2]	
LAW 905	Constitutional Law II	
LAW 950	Evidence	
LAW 992	White Collar Crime	
Family Law Track		
LAW 913	Family Mediation	
LAW 917	Negotiation and Appropriate Dispute Resolution	
LAW 963	Family Law	
Family Law Electives		
Select 7 credits from the following:		
LAW 905	Constitutional Law II	
LAW 941	Wills, Estates, and Trusts	
LAW 945	Community Property	
LAW 964	Children and the Law	
LAW 995	Main Street Law Clinic	
Total Hours		15

Students are required to compete in either the mediation or negotiation intermural competition held annually.

Courses to total 24 credits for this requirement

[1] LAW 901 *Topics: Advanced Criminal Procedure (3 cr) or Advanced Topics in Criminal Procedure (3 cr)*

[2] LAW 949 *Native American Law (3 cr) can satisfy requirements for the LL.M. degree, but cannot be counted by students seeking to sit for a bar exam.*

Law Emphases

Students majoring in Law have the option to pursue an emphasis in the following areas:

- Business Law and Entrepreneurship (p. 244)
- Litigation and Alternative Dispute Resolution (p. 244)
- Native American Law (p. 245)
- Natural Resources and Environmental Law (p. 246)

Additional Information

For detailed information about the College of Law, see the College of Law Catalog / Law Student Handbook at www.uidaho.edu/law/students or visit the College of Law website, www.uidaho.edu/law.

Natural Resources and Environmental Law Graduate Certificate

The 12-credit graduate certificate in Natural Resources and Environmental Law is intended primarily for non-law graduate students.

This certificate introduces professionals with limited to no prior legal training to the legal regimes in their day-to-day compliance activities. This certificate better prepares professionals to work as resource managers, agency scientits, ranchers, foresters, or other professions that extract, allocate, manage, or conserve natural resources.

Code	Title	Hours
LAW 907	Administrative Law	3
LAW 942	Water Law I	1-2
LAW 947	Environmental Law	3
LAW 948	Public Lands and Resources Law	3
LAW 969	Water Law II	2

Courses to total 12 credits for this certificate

COLLEGE OF LETTERS, ARTS AND SOCIAL SCIENCES

Sean M. Quinlan, Dean; Diane Kelly-Riley, Associate Dean of Research & Faculty Affairs; Mark Warner, Associate Dean of Undergraduate & Graduate Studies (112 Admin. Bldg.; 208-885-6426).

The largest division of the university, the College of Letters, Arts, and Social Sciences (CLASS) has four goals:

1. to prepare individuals for an array of careers and professions;
2. to foster scholarly inquiry, creative activity, and the generation of knowledge;
3. to serve the public, and
4. to provide the cultural and contextual foundation on which other academic and professional colleges depend.

The College - through its 10 departments and schools; and several interdisciplinary programs - prepares broadly educated individuals capable of open inquiry, critical thinking, and effective communication, who understand and are responsive to the needs of individuals and society. The College values the integration of learning and discovery in its efforts to develop and support distinctive programs that enhance the land grant mission of the university within the context of the arts, humanities, and social sciences. Students are prepared to become knowledgeable, contributing citizens in a world of diverse cultures and contexts. Beyond learning how to discover, analyze, and integrate knowledge across disciplines, graduates come to value lifelong learning as the basis for excellence in any endeavor.

Admission to the College

Students who expect to enter CLASS should plan their high school electives carefully, both to lay the foundation for their general education, which will be continued in the university, and to ensure that they are adequately prepared to begin their study at the college level. Students should select subjects in English, foreign language, social sciences, natural sciences, mathematics, and fine arts that provide a well-rounded preparation for further study. For a statement of general undergraduate and graduate admission requirements, see the admissions (p. 42) portion of the catalog.

Regular Enrollment in a Program of Studies

Students in CLASS must enroll in regular programs unless they are admitted as a non-degree seeking student. A regular program is one that leads to a degree that the College offers.

Teacher Education Program

Students in CLASS who are preparing for secondary-school teaching should consult the section on the College of Education, Health and Human Sciences (p. 170).

General College Requirements for Graduation

The College requirements applicable to the B.A. and B.S. degrees are listed in the relevant college section. The requirements for the various professional degrees (i.e., B.F.A. and B.Mus.) are listed by academic unit. The College B.A. and B.S. requirements do not apply to these professional degrees.

College Requirements for the B.A. and B.S. Degrees

Objectives. The College requirements for the B.A. and B.S. degrees are designed to ensure a broad, liberal education through the attainment of the following objectives:

1. proficiency in written and spoken English;
2. appreciation of great literature, music, and art;
3. knowledge of human development, the growth of social and economic institutions, and an understanding of the rights and responsibilities of the individual citizen;
4. perspective of American culture in the world at large;
5. sense of historical perspective;
6. acquaintance with moral, ethical, and aesthetic values;
7. familiarity with scientific thought and method;
8. ability to use and interpret basic mathematical concepts;
9. understanding of ecology; and
10. a continuing attitude of intellectual curiosity.

Requirements for the B.A. Degree

Humanities

6 credits (two courses) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Social Sciences

3 credits (one course) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Foreign/Second Language

0-16 credits (zero-four courses), i.e., competence in one foreign/second language equivalent to that gained by the completion of four semesters of college courses (through the intermediate level). This requirement may be satisfied by the completion of either of the following options:

1. 16 credits or four high-school units in one foreign/second language, or
2. 12 credits in one foreign/second language, and one three-credit course in literature translated from the same language. The 12 credits may be satisfied by three high-school units in one foreign/second language. A student may use coursework in American Sign Language offered at other institutions to fulfill this requirement. The coursework must be equivalent to that required at UI to fulfill this requirement.

Requirements for the B.S. Degree

Humanities

3 credits (one course) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Social Sciences

3 credits (one course) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Natural Sciences, Mathematics, and Statistics

6 credits (two courses) in addition to the minimum university-wide general education requirement in natural sciences/math.

For the B.S. degree, the student may substitute the successful completion of an academic minor or area of emphasis of at least 18 credits approved by the department in which the student is majoring.

Progress in Satisfying These Requirements

Students who wish to graduate by the end of four years of college work should take a program that results in substantial progress toward the fulfillment of the preceding requirements by the end of the sophomore year. In particular, students seeking the B.A. degree should take courses in fulfillment of the foreign-language requirement as early as possible. If they cannot do this during the first semester, they should immediately take a course that can be used in partial fulfillment of the science-mathematics requirement.

Departments and Programs of Instruction

At both the undergraduate and graduate level, the curricula of CLASS emphasize the aesthetic, historical, ethical, and social dimensions and interpretations of human existence. Included within CLASS are the Departments of English, History, Modern Languages & Cultures, Politics and Philosophy; Psychology and Communication Studies, Sociology and Anthropology; and Theatre Arts. The College is home to the School of Journalism and Mass Media, the Lionel Hampton School of Music, and the Martin School of Global Studies. Other programs offering degrees through CLASS include General Studies, Interdisciplinary Studies, Latin American Studies, and Organizational Sciences. The departments and schools in CLASS provide dozens of curricula and curricular options leading to certificates, minors, and baccalaureate degrees as well as programs of graduate study leading to master's and doctoral degrees.

Undergraduate

See departmental sections.

Graduate

The College of Graduate Studies offers work toward advanced degrees in many disciplines in CLASS. Work leading to a master's degree is currently available in the fields of anthropology, creative writing, English, history, music, philosophy, political science, psychology, public administration, and theatre arts. The degree of Doctor of Philosophy is available in history, philosophy, political science, and psychology. For specific degrees available, see the list of programs compiled in the General Catalog.

General Studies

The College also serves those students who have not decided upon a particular program of study by providing a course of study and degree that allow students to complete their general education requirements and explore a broad-based university curriculum without specialization. For details, see the program in general studies.

Non-degree

A non-degree program is offered in which each student's course of study is worked out to meet his or her special needs. The program is intended primarily for students who:

1. do not plan to obtain degrees at the University of Idaho,
2. plan to transfer to other institutions, or
3. have objectives that are not provided for by any of the established curricula in the College.

Interdisciplinary Studies

Students who have educational goals that necessitate work in several disciplines or departments may present an interdisciplinary curriculum for the B.A. or B.S. degree. For details, see the program in interdisciplinary studies.

Online Programs

For information regarding this programs please see our website: www.uidaho.edu/class/online.

Major Curricula

Selection of a Major

Each student should select a major curriculum no later than the beginning of the junior year. Lower-division students who have not decided on a major may pursue the Bachelor of General Studies.

Major Requirements

The departmental requirements are stated under the respective curricula.

Program in Aging Studies

Todd Thorsteinson, Coordinator (206 Student Health Center, 83844-3043).

The Aging Studies Minor connects different knowledge bases across many disciplines. The program offers an interdisciplinary approach that uses the concept of development in later life to examine such cultural variables as class, ethnicity, nationality, gender, and developmental processes and such behavioral concerns as relationship dynamics, health and lifestyle maintenance, work-retirement transitions and changes in family structures. The courses encourage students to develop critical thinking skills that will empower them as active learners and that will lead them to better understanding of what it means to grow old in a new age. Field and applied experiences enable students to demonstrate new knowledge and to refine their competence in working with real life community and family problems. Fields such as communication, recreation, criminology, economics, health services, social work, law, psychology, education, and family and consumer studies are increasingly offering special career opportunities to students with a background in aging studies.

Academic units that cooperate to offer this minor include the School of Family and Consumer Sciences (p. 120), the Department of Movement Sciences (p. 193), and the Departments of Art and Architecture (p. 143), Psychology and Communication Studies (p. 287), and Sociology and Anthropology (p. 291).

Minors

- Aging Studies Minor (p. 250)

Aging Studies Minor

Code	Title	Hours
Select courses in a minimum of two disciplines from the following:		18
COMM 491	Communication and Aging	
FCS 346	Personal and Family Finance and Management	
FCS 410	Growing Old in a New Age	
FCS 428	Housing America's Families	
FCS 434	Adulthood and Aging within the Context of Family	
H&S 150	Wellness Lifestyles	
IAD 443	Universal Design	
PSYC 312	Practical Gerontology	
PSYC 419	Adult Development and Aging	

RSTM 370	Health and Human Development in Recreation, Sport, and Tourism
Up to 6 credits may come from the following:	
ARCH 498	Internship
FCS 404	Special Topics
FCS 498	Internship
H&S 498	Internship
PEP 498	Internship in Exercise Science & Health
RSTM 498	Internship in Recreation, Sport, and Tourism
SOC 498	Internship
Total Hours	18

Other courses with at least 50% aging content as approved by a co-coordinator or an advisor may be selected.

Courses to total 18 credits for this minor

Program in American Indian Studies

Philip Stevens, Director (Phinney 115, 83844-1110; phone 208-885-8701; pstevens@uidaho.edu; www.uidaho.edu/class/interdisciplinary/aist).

The University of Idaho's American Indian Studies program engages with Indigenous knowledge(s) and cultures(s) as dynamic, vibrant, diverse, place-based, and resilient. The AIS program seeks to educate, contemplate and study the deep continuities of Indigenous knowledge(s) rooted in place and sophisticated problem solving engaged across time and space, past and the present. By privileging the voices and experiences of Indigenous peoples themselves, AIS offers:

1. a place on the University of Idaho campus for critical Indigenous thought, pedagogies, and scholarship;
2. the dissemination of Indigenous knowledge to better inform global engagement conducted at the University of Idaho and the region; and
3. intellectual engagement on historical and contemporary legal, political, academic, scientific, and other issues across the Indigenous curriculum.

Central to the vision of the American Indian Studies program are programmatic and intellectual pursuits led by AIS value co-constructed, sustained and engaged relationships with Indigenous communities.

The American Indian Studies Program is based on the following objectives:

1. **Recruitment and retention** – enhance the recruitment and retention of Indian students, as well as other students of ethnic heritage, attending and graduating from UI.
2. **Intercultural communication** – provide an opportunity for face-to-face Indian/non-Indian exchange of ideas, perceptions, and misperceptions about Indian and Euro-American culture, including a meaningful context for intercultural communications and understanding, and solution of problems of bias and stereotyping.
3. **Cultural appreciation** – foster a better understanding of and appreciation for the vitality, breadth, depth, and rich diversity of components of contemporary Indian cultures (e.g., arts, economics, literature, government, and social and religious life), as well as their histories.
4. **Rigorous curriculum with an interdisciplinary approach** – enable students to acquire the knowledge, critical methods, and research skills of the academic fields that comprise the minor, including but not limited to anthropology, English, history, sociology, and teacher education.
5. **Application** – provide an Indian pedagogy and knowledge base, i.e., an Indian perspective, that would complement and be integrated with students' other academic fields of study (e.g., business, education, engineering, forestry and natural resources, health care, humanities, or social sciences), better preparing students with the skills and expertise to address and successfully meet the various issues and challenges faced in Indian communities.
6. **Collaboration** – build partnership relationships between UI and regional tribes (Idaho and adjacent western states), especially the Coeur d'Alene and Nez Perce Tribes, improving communications, educational delivery, the sharing of expertise, and ability to address common concerns and problems.
7. **Institutional growth** – advance the concerns and issues faced in Indian communities, as well as an Indian pedagogical and knowledge perspective within the university and academic communities.
8. **Inclusivity** – serve both Indian and non-Indian students and communities alike. Through the offered curriculum and sponsored activities, the overarching objective of the American Indians Studies Program is to provide a transformational educational experience for students.

Acknowledging the vital role native languages continue to play in American Indian communities and the need for their preservation, a curriculum in Nez Perce language is offered and upon completion of two years of study can be used to satisfy the Bachelor of Arts language requirement at the University of Idaho.

Students enrolled in the academic minor in American Indian Studies will be required to complete an academic service learning internship in collaboration with an area tribe. This internship helps fulfill the program's vision and objectives of application and collaboration through the American Indian/Indigenous value of reciprocity.

Minors

- American Indian Studies Minor (p. 253)

AIST 101 Elementary Nez Perce I
4 credits
Cross-listed with NEZP 101
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.

AIST 102 Elementary Nez Perce II
4 credits
Cross-listed with NEZP 102
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.
Prereq: AIST 101.

AIST 110 Community Building
3 credits
This course is aimed towards first generation college students from indigenous communities. This course helps students build community support through existing programs at the university and facilitates students' connections with their tribal cultures. It also helps students develop good study habits and build study skills.

AIST 111 Intro to Success
1 credit
This course assists each student's academic, cultural, and social adjustment to the University. The course is also designed to provide supportive tools and resources to each student to ensure they are maximizing their ability. The course will focus on a few of the topic areas: time management, organization skills, tribal issues and tribal governmental structures, importance of diversity, learning styles, budgeting, and test taking.

AIST 201 Intermediate Nez Perce I
4 credits
Cross-listed with NEZP 201.
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.
Prereq: AIST 102 or NEZP 102.

AIST 204 (s) Special Topics
Credit arranged.

AIST 210 Native Identities
3 credits
This course is intended to develop a dynamic modern understanding of indigenous communities and self. The class will focus on such themes as family, history, blood & kinship, colonization, treaty rights and sovereignty, land and linguistics.

AIST 298 Tribal Natural Resource Internship
1-4 credits
This course is a supervised internship in an Indian community setting that provides work experience and learning opportunities in natural resource ecology and management. The course requires the development of a formal plan of activities and learning goals that must be approved by the onsite supervisor and faculty instructor.

AIST 314 Tribal Sovereignty and Federal Policy
3 credits
Cross-listed with ANTH 314, SOC 317
The Tribal Sovereignty and Federal Policy course is designed to provide an in-depth understanding of how colonial and Federal Indian Policies have impacted the lives of Tribes and their surrounding communities. Through a survey of the changing eras of policy (conquest, pre-Revolutionary approaches, the Marshall Trilogy, the Treaty Era, Allotment and Termination, and Self-Determination), students will learn about the forces that have shaped tribal communities, and a deeper appreciation for tribes' efforts to restore and exercise their sovereignty. Tribal Sovereignty as it applies to land management, natural resources and community development will be a focal area.

AIST 316 American Indian History
3 credits
Cross-listed with HIST 316
Course investigates Indigenous people in North America from time immemorial to present. Emphasizes Native American resilience and adaptability in the face of colonialism.

AIST 320 Native American & Indigenous Film
3 credits
Gen Ed: American Diversity
Examines the representation of American Indians in film from early-mid 20th century Hollywood westerns to self representations of late 20th and early 21st century films made by Native Americans. Traces changes in the cinematic depictions of Native peoples and historical and cultural reasons for those changes. Emphasizes Native-made film as extension of oral tradition, indigenous aesthetics, and sovereignty. May include international Indigenous films.

AIST 321 (s) Tribal Elders Series
3 credits, max 9
Cross-listed with ANTH 321, SOC 319
This course is intended to share information from the neighboring tribes surrounding the University of Idaho. Elders from these communities will share a tribal epistemology that each tribe considers to be essential to an education of an adult. Such educational perspective may often be missing/misrepresented or misunderstood in current university pedagogy. This class will place an emphasis on contemporary indigenous voices. This course will have a subtopic heading to incorporate the possibility of having many neighboring tribes participate.

AIST 344 Indigenous Ways of Knowing
3 credits
The course is intended as an introduction to issues of cultural, racial, ethnic and linguistic diversity that arise in American school and society. In particular we will be looking at indigenous epistemological comparison with Western educational models. The central question for the course will be: Why is educational attainment different for different groups in society, and how does that difference relate to social stratification characteristics of the larger society? We will also try to answer other questions: What is the impact of cultural and linguistic diversity on the various institutions of society, including family, schools, and the economic system? What policies and programs have been developed in the US and other societies to deal with cultural diversities? These and other questions will be the basis for our reading and discussions.

AIST 400 (s) Seminar
Credit arranged.

AIST 401 Contemporary American Indian Issues
3 credits
Gen Ed: American Diversity
Identifies and addresses key cultural, economic, educational, legal, resource, and sovereignty issues facing Indian communities today; an essential component involves presentations by representatives from the Indian communities. (Spring only)

AIST 403 (s) Workshop
Credit arranged.

AIST 404 (s) Special Topics
Credit arranged.

AIST 411 Native American Architecture
3 credits
Gen Ed: American Diversity
Cross-listed with ARCH 411
An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

AIST 412 Tribal Governance
3 credits
This course is intended to impart an understanding of the vitality and rich diversity of contemporary American Indian societies, their histories, and their literatures, e.g., in the arts and expressive culture, governmental affairs both indigenous and external, economics, ecological relations and natural resources, health care, and family, social and religious life, oral traditions, world views and cultural values. This understanding is inclusive of both indigenous cultural and contact-historical expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome.
Prereq: AIST 210 .

AIST 420 Native American Law
3 credits
Cross-listed with LAW 949
Study of Tribal Sovereignty and interaction with the U.S. government at various levels with an emphasis on treaty rights, jurisdictional issues, the trust relationship, protection of lands, the eras of U.S. Indian policy, and the continued assertion of tribal rights and interests. LAW 949 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 420 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course.

AIST 421 Native American Natural Resource Law
3 credits
Cross-listed with LAW 979
Study of the natural resources over which Tribal Nations assert stewardship or seek to influence others regarding protection of resources including sacred sites, land use and environmental protection, natural resource development, taxation, water rights, rights associated with hunting, fishing and gathering, and international approaches to indigenous lands and resources. Recommended Preparation: LAW 949. LAW 979 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 421 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course.

AIST 422 Plateau Indians
3 credits
Gen Ed: American Diversity
Cross-listed with ANTH 422 and RELS 422
An overview of historic and contemporary Indian cultures of the Plateau; oral traditions, ceremonial life, social organization, and subsistence activities; history of contact with Euro-American society. Two 1 to 2-day field trips reqd. Additional projects/assignments reqd for grad cr. ANTH 422 is a cooperative course available to WSU degree-seeking students.

AIST 478 Tribal Nation Economics and Law
3 credits
Cross-listed with LAW 928
Survey of economic development strategies by various Tribal Nations, including an overview of federal incentive programs and disincentives for the growth of strong tribal economies. Tribal legal codes, commercial projects, and federal Indian law parameters will be discussed. Topics will include: the tribal government-owned corporate model, gaming enterprises, economic diversification, the federal 8(a) program, limitations on tribal tax-exempt bond offerings, and value-added on-reservation products. LAW 928 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 478 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course. (Spring, alt/yrs)

AIST 484 American Indian Literature
3 credits
Gen Ed: American Diversity
Cross-listed with ENGL 484
Major themes and traditions in American Indian texts.
Prereq: ENGL 102
Prereq or Coreq: ENGL 175 or ENGL 257 or ENGL 258 .

AIST 498 (s) Internship
Credit arranged
Supervised internship in an Indian community setting, integrating academic study with work experience; requires formal plan of activities to be approved by the on site supervisor and assigned faculty member; a final written report will be evaluated by the assigned faculty member.
Prereq: Permission.

AIST 499 (s) Directed Study
Credit arranged.

American Indian Studies Minor

Code	Title	Hours
AIST/ANTH 314/ SOC 317	Tribal Sovereignty and Federal Policy	3
AIST 344	Indigenous Ways of Knowing	3
AIST/ANTH 422	Plateau Indians	3
Select 9 credits of elective courses from the following:		9
AIST/NEZP 101	Elementary Nez Perce I	
AIST/NEZP 102	Elementary Nez Perce II	
AIST 110	Community Building	
AIST 111	Intro to Success	
AIST/NEZP 201	Intermediate Nez Perce I	
AIST 204	Special Topics	
AIST 210	Native Identities	
AIST 298	Tribal Natural Resource Internship	
AIST/ANTH 321/SOC 319	Tribal Elders Series	
AIST 320	Native American & Indigenous Film	
AIST 400	Seminar	
AIST 401	Contemporary American Indian Issues	
AIST 403	Workshop	

AIST 404	Special Topics
AIST 411	Native American Architecture
AIST 412	Tribal Governance
AIST 420	Native American Law
AIST 421	Native American Natural Resource Law
AIST 478	Tribal Nation Economics and Law
AIST 498	Internship
AIST 499	Directed Study
ANTH 329	North American Indians
ANTH 436	North American Prehistory
ANTH 443	Plateau Prehistory
ENGL 384	Studies in American Indian Literature
SOC 427	Racial and Ethnic Relations
Total Hours	18

Courses to total 18 credits for this minor

Program in American Studies

Patricia S. Hart, Coordinator (337 Administration Bldg 83844-3178; phone 208-885-6012)

The American Studies Minor at the University of Idaho helps students gain an understanding of U.S. history, society, and cultures, past and present. It centers on courses that promote a multiethnic perspective on the U.S.; students may also examine U.S. experience within the broader context of Canadian and Latin American experience and from an international perspective. With its choice of emphases in history, social science, or American literature, the American Studies Minor gives students the flexibility to explore a variety of academic fields to widen their knowledge and prepare them for professional life or graduate study.

Minors

- American Studies Minor (p. 254)

American Studies Minor

Code	Title	Hours
AMST 301	Studies in American Culture	3
Select five courses numbered 300 or above [1]		15
Total Hours		18

[1] The five courses must be approved by the American Studies advisor. No course used toward an American Studies minor may also be used toward any major.

Courses to total 18 credits for this minor

Department of English

Jodie Nicotra, Department Chair (200 Carol Ryrie Brink Hall 83844-1102; phone 208-885-6156; englishdept@uidaho.edu).

English majors develop skills in writing, textual interpretation, and critical thinking as they study the nature of language and rhetoric and learn how English and American literary traditions develop and relate to world literature. They learn the formal qualities of texts as well as their historical and cultural contexts. Advanced courses allow students to pursue interests in literature, expository and creative writing, cultural studies, literary criticism and theory, linguistics, and English pedagogy. Students write extensively in all courses and gain speaking experience through oral reports and class discussions. (For this reason, international students must have a TOEFL score of 560 or above.)

The Department of English encourages students to plan their curricula according to personal and career goals. Aspiring writers emphasize creative writing courses; future teachers of English as a Second Language (ESL) study linguistics; pre-professionals take advanced writing and career-related courses. Those heading for graduate school in literature, linguistics, or ESL choose courses that prepare them for graduate study in their area. English majors who intend to teach English in secondary schools plan their program to satisfy state certification requirements (see "Secondary School Teaching Certification for Majors Outside the College of Education (p. 170)" in the College of Education (p. 170) section).

To enable students to focus on such interests within a coherent program of study, the English Department offers the choice of four emphases within the major: literature, creative writing, professional, and teaching.

The Department of English offers four graduate degrees at the master's level: the M.F.A, the M.A., the M.A.T., the M.A. in Teaching English as a Second Language. Through course selection and choice of thesis topic, and with the approval of appropriate faculty members, students pursuing the M.A. may emphasize literary studies or studies in composition/rhetoric. Through course selection and choice of thesis topic, and with the approval of appropriate faculty members, those pursuing the M.F.A. may emphasize fiction, poetry, or creative nonfiction. Students planning to work for the M.F.A., M.A. or M.A.T. should be well prepared through the curriculum outlined below. The MFA also offers students the tools to work and teach as literary writers. Those planning to pursue the M.A. in Teaching English as a Second Language should take extra course work in linguistics.

The purposes of the graduate program in English are to enable students to acquire a broad background in English and American language and literature and to develop specialized skills in independent, scholarly research and in mature, original criticism of literary works, to hone their skills as creative writers, or to deal with the theoretical and practical issues pertaining to English as a second language. The graduate program in English serves those who plan to teach English at junior or community colleges, those who plan to teach English at the secondary level, those who plan to seek employment in business, commerce, industry, or government, and those who plan to pursue the Ph.D.

For admission to the graduate program in English, the student must have a bachelor's degree with a major in English or equivalent preparation and should have an overall grade-point average of 3.00 (on a 4.00 scale) to be granted full admission. Non-native speakers of English must score at least 560 on the TOEFL exam.

Majors

- English (B.A.) (p. 255)

Minors

- English Minor (p. 259)
- Teaching English as a Second Language Minor (p. 259)
- Professional Writing Minor (p. 259)
- Creative Writing Minor (p. 255)

English Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of English. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- English (M.A.) (p. 258)
- Creative Writing (M.F.A.) (p. 255)

Creative Writing (M.F.A.)

Master of Fine Arts. Major in Creative Writing.

The M.F.A. is the terminal degree for those wishing to teach creative writing at the college or university level; it is also among the credentials expected of those seeking employment in arts administration, editing, and related fields. The curriculum provides theoretical and practical training in fiction, poetry, creative nonfiction, and editing and publishing.

The program's principle aim is to teach aspiring writers their craft and at the highest possible level. We gladly speak to students about publishing their work, or about teaching or editing, but our first concern is teaching and learning the craft of writing. While we encourage applicants to *apply only in one genre* , once they are admitted, we encourage them to "cross-pollinate": we like to see poets working at narrative pacing in a fiction or nonfiction class, and we like to see the prose writers attentive to individual syllables in poetry. We encourage students to experiment and to push themselves in new directions. We also insist that they know where they fit in the continuum of writers, and that they understand and can speak with conviction of where they might place themselves in any of several literary traditions.

Of the minimum 54 credits required for the degree, at least 15 are to be taken in graduate-level literature (which may include ENGL 506); 15 in graduate-level creative writing courses; 2 in workshops taught by Distinguished Visiting Writers; 1 credit in Internship: FUGUE, (ENGL 598); 3 in a Techniques course (ENGL 581, ENGL 582, or ENGL 583); 9 elective credits; and 9 in thesis. A minimum of four semesters in residence is required.

The thesis will take the form of a collection of poetry, short stories, creative nonfiction, or novel, and will be prefaced by an introduction. Upon completion of the thesis in acceptable form, each student will take an oral examination designed to test the student's ability to discuss articulately his or her creative process, intellectual and creative influences, chosen genre, aesthetic perspective, design, and intent.

Students who enter the program with advanced work in creative writing at the undergraduate level will ordinarily take only 500-level courses in English. Those who have not completed an advanced undergraduate course in one of the three major genres (fiction, poetry, creative nonfiction) will in addition to the above ordinarily take advanced undergraduate courses, as advised by the director of creative writing

Creative Writing Minor

Code	Title	Hours
ENGL 290	Introduction to Creative Writing	3
Select two Intermediate/Advanced Sequences (i.e. complete sequences in two genres):		12
ENGL 391 & ENGL 491	Intermediate Poetry Writing and Advanced Poetry Writing	
ENGL 392 & ENGL 492	Intermediate Fiction Writing and Advanced Fiction Writing	
ENGL 393 & ENGL 493	Intermediate Nonfiction Writing and Advanced Nonfiction Writing	
One of the following:		3
The intermediate course (391, 392, or 393) in the remaining genre		
ENGL/JAMM 231	Introduction to Screenwriting	
THE 440	Playwriting	
THE/ENGL 447	Screenwriting	
Total Hours		18

Courses to total 18 credits for this minor

English (B.A.)

Where specific courses are listed with the area requirements, the department may approve equivalencies.

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general requirements for the B.A. degree, and one of the following emphases:

A. Literature Emphasis

Code	Title	Hours
Foundations		
ENGL 215	Introduction to English Studies	3
ENGL 230	Introduction to Film Studies	3
ENGL 310	Literary Theory	3
ENGL 400	Seminar ((in Literature and Theory))	3
ENGL 490	Senior Seminar	3
History and Traditions [1]		
Select seven course from the following:		21
ENGL 221	History of Film 1895-1945	
ENGL 222	History of Film 1945-Present	
ENGL 241	Intro to the Study of Language	
ENGL 257	Survey of Western World Literature I	
ENGL 258	Survey of Western World Literature II	
ENGL 267	Survey of British Literature I	
ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	
ENGL 278	Survey of American Literature II	
ENGL 345	Studies in Shakespeare	
ENGL 351	Studies in Renaissance and Seventeenth-Century Literature	
ENGL 356	Studies in Restoration and Eighteenth-Century Literature	
ENGL 365	Studies in Romantic Literature	
ENGL 366	Studies in Victorian Literature	
ENGL 375	The Bible as Literature	
Expanding the Canon		
Select two courses from the following:		6
AIST 320	Native American & Indigenous Film	

ENGL 230	Introduction to Film Studies	
ENGL 281	Introduction to Women's Literature	
ENGL 329	Studies in Literature and Film	
ENGL 322	Studies in Environmental Literature and Culture	
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 382	Studies in Queer Literature	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 385	Studies in Global Anglophone Literatures	
Seminars [2]		
Select two courses from the following:		6
ENGL 400	Seminar	
ENGL 432	Seminar in Film Theory and Criticism	
ENGL 461	Seminar in Poetry	
ENGL 462	Seminar in Fiction	
ENGL 463	Seminar in Nonfiction	
ENGL 481	Seminar in Women's Literature	
ENGL 473	Seminar in Regional Literature	
ENGL 482	Seminar in Major Authors	
ENGL 496	History of the English Language	
Total Hours		48

Courses to total 120 credits for this degree

1 12 credits at 200-level, 9 of which are Surveys, and 9 credits at 300-level.

2 Two additional 400-level ENGL courses from the following; one may be an additional ENGL 400 on a different topic.

B. Creative Writing Emphasis

Code	Title	Hours
ENGL 215	Introduction to English Studies	3
ENGL 490	Senior Seminar	3
History and Traditions [1]		
Select four courses from the following:		12
ENGL 221	History of Film 1895-1945	
ENGL 222	History of Film 1945-Present	
ENGL 241	Intro to the Study of Language	
ENGL 257	Survey of Western World Literature I	
ENGL 258	Survey of Western World Literature II	
ENGL 267	Survey of British Literature I	
ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	
ENGL 278	Survey of American Literature II	
ENGL 345	Studies in Shakespeare	
ENGL 351	Studies in Renaissance and Seventeenth-Century Literature	
ENGL 356	Studies in Restoration and Eighteenth-Century Literature	
ENGL 365	Studies in Romantic Literature	
ENGL 366	Studies in Victorian Literature	
Genre Workshop Courses		
ENGL 290	Introduction to Creative Writing	3
12 additional credits including at least one full numerical sequence in a genre from the following:		12
ENGL 391	Intermediate Poetry Writing	
ENGL 392	Intermediate Fiction Writing	
ENGL 393	Intermediate Nonfiction Writing	
ENGL 491	Advanced Poetry Writing	
ENGL 492	Advanced Fiction Writing	
ENGL 493	Advanced Nonfiction Writing	
Expanding the Canon		
Select two courses from the following:		6
AIST 320	Native American & Indigenous Film	
ENGL 230	Introduction to Film Studies	
ENGL 281	Introduction to Women's Literature	
ENGL 322	Studies in Environmental Literature and Culture	
ENGL 329	Studies in Literature and Film	
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 382	Studies in Queer Literature	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 385	Studies in Global Anglophone Literatures	
Seminars		
Select two courses from the following:		6
ENGL 400	Seminar	
ENGL 461	Seminar in Poetry	
ENGL 462	Seminar in Fiction	
ENGL 463	Seminar in Nonfiction	
ENGL 481	Seminar in Women's Literature	
ENGL 432	Seminar in Film Theory and Criticism	
ENGL 473	Seminar in Regional Literature	
ENGL 482	Seminar in Major Authors	
ENGL 496	History of the English Language	
Total Hours		45

Courses to total 120 credits for this degree

1 6 credits must be Survey courses, 3 credits must be pre-1900 courses at the 300 level (ENGL 345, ENGL 351, ENGL 356, ENGL 365, ENGL 366).

C. Professional Writing Emphasis

The Professional Writing Emphasis is an individualized program for students wishing to stress preparation for careers in technical writing, editing, publishing, law, government service, and business.

Code	Title	Hours
ENGL 202	Intro to Professional Writing	3
ENGL 215	Introduction to English Studies	3
Professional Writing [1]		
Select one course from the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 290	Introduction to Creative Writing	
Select four courses from the following:		12
ENGL 309	Rhetorical Style	

ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
ENGL 318/ JAMM 328	Science Writing	
ENGL 393	Intermediate Nonfiction Writing	
ENGL 402	Internship in Tutoring Writing	
ENGL 419	Writing for the Web	
ENGL 498	Internship	
Linguistics		
ENGL 241	Intro to the Study of Language	3
Literary History		
Select 6 credits from the following:		6
ENGL 257	Survey of Western World Literature I	
ENGL 258	Survey of Western World Literature II	
ENGL 267	Survey of British Literature I	
ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	
ENGL 278	Survey of American Literature II	
Cultural Diversity		
Select one course in non-canonical or underrepresented literatures:		3
AIST 320	Native American & Indigenous Film	
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 382	Studies in Queer Literature	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 385	Studies in Global Anglophone Literatures	
ENGL 481	Seminar in Women's Literature	
Or an advisor-approved special topics or extra-departmental course		
Electives		
Select three courses from the following:		9
ART 216	Digital Tools	
ART 221	Introduction to Graphic Design	
COMM 233	Interpersonal Communication	
COMM 332	Communication and the Small Group	
COMM 335	Intercultural Communication	
COMM 355	Organizational Communication	
COMM 410	Conflict Management	
JAMM 325	Publications Editing	
JAMM 350	Public Relations Writing and Production	
JAMM 425	Feature Article Writing	
POLS 364	Politics of the Environment	
POLS 454	Public Organization Theory	
PSYC 320	Introduction to Social Psychology	
SOC 230	Social Problems	
SOC 201	Introduction to Inequalities & Inclusion	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
Any English Course Numbered above 200 not alredy taken to satisfy the above requirements.		
Capstone		
ENGL 440	Client-Based Writing	3
Total Hours		45

Courses to total 120 credits for this degree

[1] Note that ENGL 208 and ENGL 293 cannot both count towards fulfillment of the requirements in the Professional Writing Emphasis.

D. Teaching Emphasis

Code	Title	Hours
Foundations		
ENGL 215	Introduction to English Studies	3
History and Traditions		
ENGL 257	Survey of Western World Literature I	3
or ENGL 258	Survey of Western World Literature II	
ENGL 267	Survey of British Literature I	3
or ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	3
ENGL 278	Survey of American Literature II	3
ENGL 345	Studies in Shakespeare	3
Language		
ENGL 201	English Grammar: Key Concepts and Terms	1
ENGL 241	Intro to the Study of Language	3
Select two linguistics courses from the following:		6
ENGL 408	Language Acquisition and Development	
ENGL 442	Introduction to Morphology and Syntax	
ENGL 444	Sociolinguistics	
ENGL 496	History of the English Language	
Writing		
ENGL 309	Rhetorical Style	3
ENGL 401	Writing Workshop for Teachers	3
ENGL 208	Personal & Exploratory Writing	3
or ENGL 290	Introduction to Creative Writing	
Expanding the Canon		
Select one course in non-canonical or underrepresented literatures:		3
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 382	Studies in Queer Literature	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 385	Studies in Global Anglophone Literatures	
ENGL 481	Seminar in Women's Literature	
Or an advisor-approved special topics or extra-departmental course.		
Electives		
Two 300 or 400-level Literature Courses		6
One Elective ENGL course at the 300 or 400-level.		3
Capstone		3-15
EDCI 485	Secondary Internship	
ENGL 490	Senior Seminar	

Students who seek to fulfill requirements for teaching certification must complete the EDCI 485 Secondary Internship. Students who decide not to complete the secondary teaching internship must complete ENGL 490 Senior Seminar and may fulfill any remaining credits with electives.	
Total Hours	52-64

Courses to total 120 credits for this degree

E. Linguistics and Literacy

Code	Title	Hours
Foundations		
ENGL 215	Introduction to English Studies	3
ENGL 241	Intro to the Study of Language	3
Linguistics		
ENGL 407	Phonetics and Phonology	3
ENGL 408	Language Acquisition and Development	3
ENGL 442	Introduction to Morphology and Syntax	3
ENGL 444	Sociolinguistics	3
ENGL 496	History of the English Language	3
Pedagogy		
Select two courses from the following:		6
EDCI 437	Secondary Foreign Language Methods	
EDCI 448	Introduction to ENL	
EDCI 449	ENL Methods	
ENGL 413	ESL Meth I:Basic Oral/Aural Skills	
ENGL 414	ESL Methods II:Reading, Writing, and Special Purpose English	
Electives		
Select two courses from the following:		6
ANTH 261	Language and Culture	
ANTH 427	Racial and Ethnic Relations	
COMM 335	Intercultural Communication	
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 385	Studies in Global Anglophone Literatures	
ENGL 401	Writing Workshop for Teachers	
ENGL 402	Internship in Tutoring Writing	
ENGL 448	Psycholinguistics	
ENGL 481	Seminar in Women's Literature	
FLEN 243	English Word Origins	
Focus Area		
Select 15 credits that focus on writing or 15 credits that focus on literature to satisfy the literacy component:		
Writing Focus		
Foundations		
ENGL 202	Intro to Professional Writing	3
Select two courses from the following:		6
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 290	Introduction to Creative Writing	
Select two courses from the following:		6
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
ENGL 318	Science Writing	
ENGL 393	Intermediate Nonfiction Writing	
Literature Focus		
ENGL 257	Survey of Western World Literature I	3
ENGL 258	Survey of Western World Literature II	3
ENGL 310	Literary Theory	3
Select two courses from the following:		6
ENGL 267	Survey of British Literature I	
ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	
ENGL 278	Survey of American Literature II	
Capstone		
ENGL 490	Senior Seminar	3
Total Hours		66

Courses to total 120 credits for this degree

Teacher Certification

CLASS English majors wishing secondary teaching certification must complete the appropriate English and education courses listed in the "Teaching Majors and Minors (p. 179)" in the Department of Curriculum and Instruction (p. 173) section of this catalog. Students should plan their programs with their English advisor; they should also see a College of Education, (p. 170) Health and Human Sciences (p. 170)advisor regarding certification requirements.

English (M.A.)

Master of Arts. Major in English.

Of the minimum of 33 credits required for the degree, at least 24 credits must be earned in the Department of English at the University of Idaho; included in the total credits required, 3 credits are to be taken in a theory course (which may include ENGL 506, ENGL 511, or a theory course approved by the department's director of M.A. English) and 3 credits in pre-1900 literature. Course work for the M.A. in English is normally at the 500s level; however, up to six credits of work at the 400s level may be included, but only with the approval of the student's major professor and the department's director of graduate studies. Students are allowed to take 3 credits maximum in practica applying toward the degree.

Thesis and Non-Thesis Options:

The thesis option requires 27 credits of coursework and 6 thesis credits, leading to the submission of an acceptable thesis of 60 pages or more. See the College of Graduate Studies (p. 232) "Graduate Handbook for Theses and Dissertations."

The non-thesis option requires 30 credits of coursework and 3 research credits (ENGL 599). The student works with a faculty member to produce a revised seminar paper suitable to be submitted for publication, an abstract for the paper, a concise explanation of initial and additional research and revisions (3-5 pages), and a substantial annotated bibliography of work in the field.

For both the thesis and non-thesis options, each student will take an oral M.A. examination following completion of work submitted in acceptable form, as confirmed by the major professor. The oral examination will be designed to test the student's ability to defend his or her work articulately with respect to research methodology, critical perspective, and applicability to related work in the area.

Students and their major professors and committees will design their programs.

Theses or papers may address topics in literature and literary theory and criticism or composition and rhetorical theory.

Master of Arts. Major in Teaching English as a Second Language.

The M.A. in TESL is intended for students who are interested in learning to teach English as a second language at the post-secondary level. The students take courses in linguistics and in language teaching pedagogy. This curriculum provides them with theoretical background and practical training in the areas of second language acquisition.

Of the minimum of 33 credits required for the degree, at least 24 must be earned while enrolled in residence at UI, and at least 21 credits must be earned in courses numbered 500 and above. The 33 credits are to include the following courses (18 credits):

Code	Title	Hours
ENGL 513	ESL Methods I: Basic Oral/Aural Skills	3
ENGL 515	ESL Teaching Practicum	3
ENGL 517	Introduction to Applied Linguistics	3
ENGL 524	Descriptive Linguistics	3
ENGL 544	Sociolinguistics	3
ENGL 551	Theories of Second/Additional Language Acquisition	3
Total Hours		18

The remaining 15 credits are to be taken in approved electives in the Department of English, which may include thesis credits.

The M.A. in TESL offers a thesis option. Students who choose to complete the thesis option will write a thesis which may be up to 6 credits of their required 33 credits. Students who do not elect to write a thesis must complete their non-thesis option in the form of a comprehensive examination.

Native speakers of English in the TESL program must complete or have completed two years of college work (or its equivalent) in a modern foreign language. They must have studied a foreign language for at least one semester (or equivalent) within the preceding five years. Non-native speakers of English are excused from this requirement.

English Minor

Code	Title	Hours
ENGL 215	Introduction to English Studies	3
ENGL 267	Survey of British Literature I	3
or ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	3
or ENGL 278	Survey of American Literature II	
Select four Upper-Division English courses [1]		12
Total Hours		21

Courses to total 21 credits for this minor

1 Chosen from any course at the 300 or 400 level; at least two must be literature courses, and at least one must be at the 400 level.

Professional Writing Minor

Code	Title	Hours
ENGL 202	Intro to Professional Writing	3
ENGL 440	Client-Based Writing	3
Select two of the following courses: [1]		6-7
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 290	Introduction to Creative Writing	
JAMM 121	Media Writing	
JAMM 275	Introduction to Broadcasting and Digital Media Production	
Select three of the following courses: [2]		9
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
ENGL 318/ JAMM 328	Science Writing	
ENGL 402	Internship in Tutoring Writing	
ENGL 419	Writing for the Web	
ENGL 498	Internship (Max 6 credits)	
JAMM 325	Publications Editing	
JAMM 350	Public Relations Writing and Production	
JAMM 425	Feature Article Writing	
Total Hours		21-22

Courses to total 21 credits for this minor

1 ENGL 208 and ENGL 290 cannot both count towards fulfillment of the requirements in the Professional Writing Emphasis.

2 Only one JAMM course may be used towards this requirement.

Teaching English as a Second Language Minor

Code	Title	Hours
ENGL 241	Intro to the Study of Language	3
ENGL 442	Introduction to Morphology and Syntax	3
ANTH 261	Language and Culture	3
or ANTH 427	Racial and Ethnic Relations	
EDCI 437	Secondary Foreign Language Methods	3
or ENGL 413	ESL Meth I:Basic Oral/Aural Skills	
Select 9 credits of Electives from among other courses in English language and linquistics or from ANTH 261 or ANTH 427 if not chosen above		9
Total Hours		21

Courses to total 21 credits for this minor

General Studies

Kristi Overfelt, Director (113 Admin. Bldg.; 208-885-2024); Shawna Bertlin (208-885-0712) and Lexi Schaar (208-885-7765), General Studies Advisors.

The Bachelor of General Studies (BGS) program serves students in two ways: first, it serves entering students who wish to examine multiple academic areas before selecting a major; second, it serves students who intend to pursue the BGS degree, having developed a coherent program of study with the assistance of their advisor. These students will be able to learn and integrate complex ideas across disciplinary lines and communicate these ideas in written and verbal forms. Students who have declared a major in General Studies are strongly encouraged to utilize programs and services offered by the Career Center and the Counseling and Testing Center to assist them in identifying possible career paths and interests. Within their first year as a BGS major, students are advised to take a career exploration course. Particular attention is paid to identifying critical prerequisite courses so that students are able to enter a major on track for graduation.

Admission to the Program

New students wishing to enroll in the General Studies program may indicate their choice on the application form for admission to the university. Current students may transfer into the BGS major by submitting a change of curriculum form to the Registrar's Office.

General Regulations

Students participating in General Studies while exploring their choice of majors are strongly advised to complete courses that meet requirements as described in Regulation J of the General Catalog. At the same time, these students are strongly advised to select exploratory elective courses that will provide exposure to various academic programs at the UI. Students may transfer from General Studies to a new major at any time if they satisfy the prerequisites and grade-point requirements of that major. Students must have at least a 2.00 grade-point average to transfer into many of the university's colleges.

Majors

- Bachelor of General Studies Curriculum (p. 260)

Bachelor of General Studies Curriculum

The curriculum leading to the degree of Bachelor of General Studies is designed to provide maximum flexibility for undergraduates while planning their program of studies. Since the only specific subject requirements are the general university requirements, students can plan their programs to the best advantage of their particular educational objectives. This means that students must bear the major responsibility for their choice of courses. Those who plan wisely have the opportunity to obtain an excellent education. The key admonition is: plan your program carefully.

The major thrust of the B.G.S. degree program is nonspecialized education. Although a student could take his or her work in a limited number of departments, the intent of this program is to permit great latitude in the choice of subjects so that students may satisfy their particular objectives. No student may become a candidate for the B.G.S. degree who has already earned a baccalaureate degree or who is a candidate for another degree offered by the university.

Major

No major other than "general studies" will be certified on the student's diploma or official transcript. Students who wish to have a designated major should pursue a departmental baccalaureate degree (B.A., B.S., etc).

Minor

Students graduating with a Bachelor of General Studies may satisfy requirements for one or more minors. In these cases their transcript will reflect these minors.

Degree Requirements

In addition to the general university requirements for the baccalaureate degree (see regulation J-3 (p. 91)), sufficient electives must be taken to total 120 credits. A minimum of 45 credits must be earned in courses numbered 300 and above. Not more than 36 credits in any one discipline may be counted in the 120 credits.

Suggestions to Students

Students are advised not to make a firm decision with respect to the B.G.S. degree before the end of the freshman year. During the freshman year, and probably during the sophomore year, students should consider following one of the curricula leading to a departmental baccalaureate degree, deviating from the departmental requirements only where it appears educationally advisable to do so.

It is very important that the student working toward the B.G.S. "look ahead" to see in which departments he or she wishes to accumulate the required 45 credits in upper-division courses (those numbered 300 and above). Many upper-division courses have prerequisites that must be completed during the early semesters of the student's undergraduate career. If planning is delayed, it may be that some courses will be "unavailable" because the student has not taken the prerequisites.

Global Studies, Martin School of

Romauld Afatchao, Associate Director, afatchao@uidaho.edu (329 Administration Building. 208-885-5735.)

International Studies

Bill L. Smith, Chair (338 Admin Bldg. 83844-3177; phone 208-885-6527).

Modern Languages and Cultures

Rachel Halverson (German), Dept. Chair (302 Admin. Bldg. 83844-3174 phone 208-885-6179; modlang@uidaho.edu (forlang@uidaho.edu)**).**

The Martin School of Global Studies provides students with several interrelated disciplines in which they can pursue B.A./B.S. degrees or minors. These programs are situated in two primary domains one focused on language and culture and one focused on international studies. The Modern Languages and Cultures department offers programs in Modern Language Business, French, Latin American Studies, and Spanish, with minors available in Asian Studies, French, German, and

Spanish. The International Studies program offers a bachelor's degree and a minor in International Studies.

International Studies

The Program in International Studies offers a unique, interdisciplinary approach to studying global issues. Students take a core of common courses in a Global Theme during the freshman and sophomore years, and then select an issue emphasis and a regional emphasis which shape the courses taken during the junior and senior years. The regional emphasis is supplemented by language study and an international experience of at least ten weeks' duration. Such international experience can take the form of studying abroad, completing an internship abroad, or participating in service learning or other volunteer experience abroad.

Program staff and faculty emphasize experiential learning, undergraduate research opportunities, and excellence in teaching for all students in the program.

Modern Languages and Cultures

Students who take modern language literature and culture courses to complete a MLC major or minor will:

- Gain a deeper understanding of a variety of cultures, including their own;
- Become highly competitive in the international and domestic workforce;
- Increase their critical thinking and communication skills;
- Understand and make connections within the interdependent world
- And become engaged world citizens.

As a leading center for the study of languages and cultures in Idaho, the Department of MODERN LANGUAGES AND CULTURES (MLC) helps students gain a deeper understanding of a variety of cultures, including their own and become engaged world citizens. MLC faculty members, who are from the U.S, Mexico, France, Japan, China, Germany and Spain including the Basque and Cataluña regions, prepare their students for professions in which proficiency in a second or third language is useful or required, including business, government, healthcare, law, media and education. This is reflected in the growing number of double/triple majors and academic minors who choose to combine the formal study of a language with another field related to the student's other career or professional interests enabling them to become highly competitive in the international and domestic workforce.

In addition to the MLC course work, language majors are required to fulfill an international experience (eight week minimum) by completing a MLC approved study abroad program or international internship or faculty-led experience or a combination of all. This experience should take place after the student has finished language study through the intermediate (200) level. The study abroad program, internship or faculty-led experience must receive prior approval from the student's MLC advisor and/or MLC Validation Committee appointed by the chair. Shorter international experiences exceptions can be considered by MLC Validation Committee in case of extraordinary financial or family circumstances.

If a student has already studied a language in high school, he or she may be eligible to receive vertically-related course credits simply by completing a more advanced course at UI.

International Studies

Majors

- International Studies (B.A.) (p. 263)

Minors

- International Studies Minor (p. 264)

Modern Languages and Cultures

Majors

- French (B.A.) (p. 262)
- Latin-American Studies (B.A.) - For information on an undergraduate major in Latin American Studies, please refer to the Program in Latin American Studies (p. 273).
- Modern Language Business (B.A.) (p. 264)
- Spanish (B.A.) (p. 264)

Minors

- Asian Studies (p. 262)
- French (p. 262)
- German (p. 262)
- Spanish (p. 265)

Modern Languages and Cultures Undergraduate Curricular Requirements

A maximum of 15 transfer credits and/or credits earned through study abroad may be applied toward the upper-division requirements for the B.A. degree in Foreign Language, French, and Spanish.

Students who receive a C or D in their first upper-division language class are required to pass an oral and written proficiency exam to meet minimum departmental proficiency standards before being allowed to register in other upper-division language classes.

A student must receive a C or better in an upper-division course in the appropriate target language to count towards the major.

Before going on a study abroad program, students must have the approval of their major advisor to ensure that their proposed program meets with departmental approval. Upon returning to UI, the Department of Modern Languages & Cultures will evaluate the students' oral and written proficiency and determine which classes studied abroad may count towards the major. Study abroad credits with the number 404 and University of Idaho credits with the number 449, 498, or 499 will not automatically count toward the Foreign Languages, French, or Spanish majors; they will be evaluated by a Modern Languages and Cultures advisor and may be used to complete the major only upon approval.

Modern Languages and Cultures Academic Minor Requirements

Students must complete 20 credits for the Asian Studies, French, German, or Spanish minor, of which at least 9 must be upper-division, and take Avant's STAMP (STAndards-based Measurement of Proficiency) exit exam. At least 9 of the 20 credits must be UI courses taken in residence.

Credits earned through study abroad may be applied toward completion of the minor requirements.

Vertical credits may be acquired per Regulation I for the 101, 102, 201, and 202 courses as part of the 20 credits, but vertical credits may not be acquired per Regulation I for 300/400-level courses. It is not possible to challenge any upper-division courses for the minor.

Transfer credits may be applied toward a minor with the approval of the department offering the minor; however, the last nine credits applied to completion of the minor must be earned in

1. UI courses,
2. through UI study abroad, or
3. through student exchange programs, and may not include credits earned through correspondence study.

A student must receive a C or better in any course to count for the Asian Studies, French, German, or Spanish minor.

Asian Studies Minor

Code	Title	Hours
Select 12 credits of one Asian language or one semester of Approved Study Abroad in Asia		12
Select 9 credits from the following: [1]		9
ANTH 102	Cultural Anthropology	
ANTH 261	Language and Culture	
COMM 335	Intercultural Communication	
FLEN 325	Contemporary Chinese Culture and Customs	
FLEN 326	Chinese Cinema in Translation	
FLEN 331	Japanese Anime	
GEOG 200	World Regional Geography	
HIST 180	Introduction to East Asian History	
HIST 482	Japan, 1600 to Present	
HIST 484	Modern China, 1840s to Present	
HIST 485	Chinese Social and Cultural History	
IS 325	The Contemporary Muslim World	
PHIL 307	Buddhism	
POLS 205	Introduction to Comparative Politics	
POLS 237	Introduction to International Politics	
POLS 420	Introduction to Asian Politics	
Total Hours		21

[1] No more than 9 credits in one discipline and no more than 6 credits in student's major. Of the 21 credits, nine (9) credits of upper division coursework required. Students must complete 6 of these 9 credits of upper-division coursework at the University of Idaho to complete the Asian Studies minor.

Courses to total 21 credits for this minor

French (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

An international experience (eight week minimum) and the course work listed below are required of students. This international experience requirement will be fulfilled by completing a MLC approved study abroad program or international internship or faculty-led experience or a combination of all. This experience (completed in French) should take place after the student has finished language study through the intermediate (200) level. The study abroad program or the internship must receive prior approval from the student's MLC advisor and/or MLC Validation Committee appointed by MLC chair. Shorter international experiences exceptions can be considered by MLC Validation Committee in case of extraordinary financial or family circumstances.

The French Major consists of a minimum of 36 upper-division credits which must include the following:

- At least 9 FREN (p. 538) credits must be at the 400-level (9 cr)
- At least 9 credits must be completed on campus
- A maximum of 9 FLEN (p. 530) credits out of the 36 may be applied towards the major; the remaining credits must be in FREN (p. 538)
- A second foreign language (elem & interm or equivalent) (16 cr) or a minor in International Studies (p. 264) (18 cr).[1]

Additionally, all majors must complete a 1-credit MLC capstone course based on their international experience and take the Avant's STAMP (STAndards-based Measurement of Proficiency) exit exam before applying for graduation.

[1] This requirement is waived for students with a double major (French plus another major)

French Minor

For specific guidelines see Modern Languages and Cultures Academic Minor Requirements (p. 261).

Code	Title	Hours
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
Select 9 credits which may not include lab-based or FLEN courses		9
Total Hours		25

Courses to total a minimum of 20 credits for this minor

German Minor

Code	Title	Hours
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
Select 9 credits of upper-division German courses which may not include lab-based or FLEN courses [1]		9
Total Hours		25

[1] Students must complete 6 of these 9 credits of upper-division coursework at the University of Idaho to complete the German minor.

Courses to total 25 credits for this minor

International Studies (B.A.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general requirements for the B.A. degree, and:

Code	Title	Hours
IS 310	The United Nations	3
IS 410	NGOs in the International System	3
IS 495	International Studies Senior Seminar	3
STAT 251	Statistical Methods	3
Select one of the following groups of courses:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one of the following:		3
GEOG 260	Introduction to Geopolitics	
POLS 205	Introduction to Comparative Politics	
POLS 237	Introduction to International Politics	
Select 6 credits from the following:		6
ANTH 102	Cultural Anthropology	
ENGL 385	Studies in Global Anglophone Literatures	
ENVS 225	International Environmental Issues Seminar	
GEOG 200	World Regional Geography	
IS 195	International Studies Freshman Seminar	
JAMM 490	Global Media	
SOC 350	Food, Culture, and Society	
Select at least 12 credits from one of the following issue emphases: [1]		12
International Relations (p. 263)		
International Economics and Business (p. 263)		
Global Resources and Development (p. 263)		
Select at least 12 credits from one of the following regional emphases: [2]		12
Africa		
Asia		
Europe		
Latin America and the Carribean		
North America		
Modern Foreign Language Proficiency [3]		0-22
Select 12 credits of International Experience		12
International Experience (p. 263)		
Total Hours		61-85

1 This requirement may be waived by completion of a relevant second major with approval from the program director.

2 Courses must be approved by the student's departmental advisor.

3 Demonstrated proficiency in a modern foreign language correlating with the region of emphasis and equivalent to that gained from six semesters of university study. Primary instruction in any class counting towards this requirement must be in the target language.

International Experience

In addition, international experience in the student's region of emphasis is required for all students in this major. The experience must extend consecutively for at least 8 weeks, be qualified for at least 12 credits, and include an academic project or assignment and immersion in the culture of the country. All costs associated with the international experience are the responsibility of the student.

The requirement of international experience will normally be fulfilled by completing a registered credit program such as study abroad, student exchange, student teaching, internship, or a Faculty-Staff Led International Trip for 8 weeks minimum. In general, credits are registered on the UI campus; course work and field experience are taken abroad. In some cases, permission may be granted to complete noncredit work experience that places the student abroad for a contracted length of time. Normally this work assignment will be completed during the degree program. In some instances, prior work experience may be accepted based on the following criteria: verification, length, nature, recentness, and relevancy of experience.

Issue Emphases in International Studies

Recommended courses for completion of requirement (special topic courses may be used when approved by the director).

A. International Relations

Code	Title	Hours
GEOG 365	Political Geography	3
HIST 430	U.S. Diplomatic History	3
IS 320	Model United Nations	2
IS 321	UN and Related Agencies	1
IS 350	Sports and International Affairs	3
POLS 338	American Foreign Policy	3
POLS 440	International Organizations & International Law	3
POLS 449	World Politics and War	3
POLS 487	Political Violence and Revolution	3
SOC 335	Terrorism, Society and Justice	3

B. International Economics and Business

Code	Title	Hours
AGEC 481	Agricultural Markets in a Global Economy	3
FIN 381	International Finance	3
MKTG 482	International Marketing	3
ECON 446	International Economics	3
ECON 447	International Development Economics	3
GEOG 345	Global Economic Geography	3
IS 323	International Monetary and Trade Organizations	3

C. Global Resources and Development

Code	Title	Hours
AGEC 481	Agricultural Markets in a Global Economy	3
ANTH 462	Human Issues in International Development	3
FCS 411	Global Nutrition	3
FS 436	Principles of Sustainability	3
GEOG 313	Global Climate Change	3
GEOG 350	Geography of Development	3-4
GEOG 360	Population Dynamics and Distribution	3-4
IS 322	International Environmental Organizations	3
NRS 493	International Land Preservation and Conservation Systems	3
POLS 480	Politics of Development	3
SOC 340	Social Change & Globalization	3

Courses to total 120 credits for this degree

Other courses with an international component may be used as electives with permission of the program director.

International Studies Minor

Code	Title	Hours
Select 2-3 Global Theme courses from the following:		6-9
ANTH 102	Cultural Anthropology	
ENGL 385	Studies in Global Anglophone Literatures	
ENVS 225	International Environmental Issues Seminar	
GEOG 200	World Regional Geography	
GEOG 260	Introduction to Geopolitics	
JAMM 490	Global Media	
POLS 205	Introduction to Comparative Politics	
POLS 237	Introduction to International Politics	
SOC 350	Food, Culture, and Society	
Select 9-12 credits of IS courses, at least 9 credits upper division		9-12
Total Hours		15-21

Courses to total 18 credits for this minor.

Modern Language Business (B.A.)

Designed to provide the student of modern languages with a liberal arts education and a core of business courses that will open doors to a career in international business.

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

An international experience (eight week minimum). This international experience requirement will be fulfilled by completing an MLC approved study abroad program or international internship or faculty-led experience or a combination of all. This experience should take place after the student has finished language study through the intermediate (200) level. The study abroad program or the internship must receive prior approval from the student's MLC advisor and/or MLC Validation Committee appointed by MLC chair. Shorter international experiences exceptions can be considered by MLC Validation Committee in case of extraordinary financial or family circumstances.

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
FLEN 307	Institutions of the European Union	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select three or more courses from the following:		9
ENTR 414	Entrepreneurship	
FIN 301	Financial Resources Management	
MHR 311	Introduction to Management	
MKTG 321	Marketing	
MIS 350	Managing Information	
OM 370	Process Management	
OM 378	Project Management	
Select 6 credits of Business electives from the following:		6
Upper-Division Business Electives		
BUS 190	Integrated Business and Value Creation (AND Upper-Division Business Elective)	
Select one modern language; elementary and intermediate:		16
Chinese		
French		
German		
Japanese		
Spanish		
Select 21 credits of approved upper-division courses in the same language (including one business course or approved alternative in the target language		21
Total Hours		61-62

Courses to total 120 credits for this degree

Spanish (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

An international experience (eight week minimum) and the course work listed below are required of students. This international experience requirement will be fulfilled by completing a MLC approved study abroad program or international internship or faculty-led experience or a combination of all. This experience (completed in Spanish) should take place after the student has finished language study through the intermediate (200) level. The study abroad program or the internship must receive prior approval from the student's MLC advisor and/or MLC Validation Committee appointed by MLC chair. Shorter international experiences exceptions can be considered by MLC Validation Committee in case of extraordinary financial or family circumstances.

The Spanish major consists of a minimum of 36 upper-division credits, which must include the following:

- SPAN 301, SPAN 302, SPAN 305, and SPAN 306
- At least 9 SPAN (p. 698) credits must be at the 400-level (9 cr)
- At least 9 credits must be completed on campus
- A maximum of 9 FLEN (p. 530) credits out of the 36 may be applied towards the major; the remaining must be in SPAN (p. 698)

A second foreign language (elem & interm or equivalent) (16 cr) or a minor in International Studies (p. 264) (18 cr).[1]

Additionally, all majors must complete a 1-credit MLC capstone course based on their international experience and take the Avant's STAMP (STAndards-based Measurement of Proficiency) exit exam before applying for graduation.

[1] This requirement is waived for students with a double major (Spanish plus another major)

Spanish Minor

Code	Title	Hours
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
Upper-Division Spanish Courses		
Select 9 credits of upper-division Spanish courses: [1]		9
Total Hours		25

[1] Nine credits of upper-division Spanish courses may include SPAN 301 and SPAN 302, but may not include lab-based or FLEN courses.
Students must complete 6 of these 9 credits of upper-division coursework at the University of Idaho to complete the Spanish minor.

Courses to total 25 credits for this minor

Department of History

Ellen Kittell, Interim Chair (315 Admin. Bldg. 83844-3175; phone 208-885-6253).

History is the study of human experience in all its diverse aspects. To interpret the present one must understand the past; there is no better predictor of the future than past behavior. History courses train students to think analytically, to conduct research, to evaluate source materials, and to interpret human behavior. Through writing and independent research, students hone their analytical and communication skills. They also acquire greater cultural and international awareness as they become more familiar with the sociocultural settings that shapes human consciousness and action. History is by nature interdisciplinary and international in scope.

A degree in history offers excellent preparation for students to pursue careers in international business, international relations, management, government and military service, law, education, library science, communications and media, tourism and recreation, museum studies and curatorships, and working with public documents and government records.

The department offers courses of study leading to the B.A. or B.S. degree. The undergraduate curriculum focuses on the United States (colonial times to the present); Europe (Antiquity to the current EU); Latin America (modern); Asia (modern); and History of Science, Health & Environment. History faculty members also offer coursework for students in Environmental Science, International Studies, Interdisciplinary Studies, and Latin American Studies, as well as for minors in Religious Studies, Women and Gender Studies, and American Indian Studies.

Graduate study is offered in the history of America, Europe (medieval through modern), Latin America, and History of Science, Health, and Environment. The degree programs include Master of Arts and Doctor of Philosophy, for which dissertation topics are limited to the fields of the North American West, U.S. since 1877, historical archaeology, and Europe since 1750. Dissertations in historical archaeology are undertaken with the collaboration of anthropology faculty specializing in this field. In addition, we offer a Ph.D. in history with a focus in historical archaeology in coordination with the Department of Sociology and Anthropology (p. 291).

Students applying for admission to graduate study in history must be approved by the majority of the history faculty. Students seeking graduate degrees in history must present recent GRE scores, an undergraduate transcript with at least a 3.00 average in all history courses and a 2.80 overall average that shows at least 12 credits earned in a foreign language.

Majors

- History (B.A.) (p. 265)
- History (B.S.) (p. 267)

Minors

- History Minor (p. 268)

History Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of History. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree. Detailed information about requirements and procedures related to these programs is available in printed form from the head of the department.

- History (M.A.) (p. 267)
- History (Ph.D.) (p. 267)

History (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

Code	Title	Hours
HIST 290	The Historian's Craft	3
HIST 495	History Senior Seminar	3
Select 12 credits of 100- or 200-Level History courses		12
Emphases		
Select one of the following emphases:		36-41
American (p. 265)		
European (p. 266)		
General (p. 267)		
Total Hours		54-59

A. American Emphasis

Code	Title	Hours
Select 18 credits from the following American history courses:		18
HIST 310	The Civil War and Reconstruction	
HIST 315	Comparative African-American Cultures	
HIST 316	American Indian History	
or AIST 316	American Indian History	
HIST 318	Colonial America: A Collision of Peoples	
HIST 319	19th-century America: Expanding America	
HIST 320	20th-century America: The Colossus	
HIST 325	The Long 1960s	
HIST 414	History and Film	
HIST 454	Pictures and Power: Photography, Politics, and American History	

HIST 461	Idaho and the Pacific Northwest	
HIST 462	History of the American West	
HIST 420	History of Women in American Society	
HIST 424	American Environmental History	
HIST 430	U.S. Diplomatic History	
HIST 441	Slavery and Freedom in the Americas	
HIST 463	Fashion and Identity in American Culture	
Select 15 credits in related fields from the following: [1]		15
AIST - Any course.		
ANTH 329	North American Indians	
ANTH 422	Plateau Indians	
ANTH 427	Racial and Ethnic Relations	
ANTH 431	Historical Archaeology	
ANTH 436	North American Prehistory	
ANTH 443	Plateau Prehistory	
ARCH 483	Urban Theory and Issues	
ART 302	Modern Art and Theory	
ART 303	Contemporary Art and Theory	
ART 313	History and Theory of Modern Design	
ART 382	History of Photography	
ART 407	New Media	
DAN 421	Dance History and Contemporary Views	
ENGL 221	History of Film 1895-1945	
ENGL 222	History of Film 1945-Present	
ENGL 230	Introduction to Film Studies	
ENGL 322	Studies in Environmental Literature and Culture	
ENGL 277	Survey of American Literature I	
ENGL 278	Survey of American Literature II	
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 382	Studies in Queer Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 432	Seminar in Film Theory and Criticism	
ENGL 473	Seminar in Regional Literature	
ENGL 477	Documentary Film	
ENGL 481	Seminar in Women's Literature	
FOR 310	Indigenous Culture and Ecology (Max 9 credits)	
FOR 484	Forest Policy and Administration	
GEOG 420	Land, Resources, and Environment	
JAMM 100	Media and Society	
JAMM 340	Cultural Diversity and the Media	
JAMM 341	Mass Media Ethics	
JAMM 378	American Television Genres	
JAMM 379	Hollywood Portrayals of Journalists	
JAMM 440	Critical Issues in Mass Media	
JAMM 444	Mass Media and Public Opinion	
JAMM 445	History of Mass Media	
JAMM 446	Women in the Media	
JAMM 447	Screenwriting	
LARC 151	Introduction to the Built Environment	
MS 227	American Military History	
MUSH 201	History of Rock and Roll	
MUSH 330	History of Music Theatre	
MUSH 410	Studies in Jazz History	
MUSH 419	Studies in 20th Century Music	
NEZP/AIST 101	Elementary Nez Perce I	
NEZP/AIST 102	Elementary Nez Perce II	
NRS/POLS 462	Natural Resource Policy	
POLS 275	American State and Local Government	
POLS 331	American Political Parties and Elections	
POLS 332	American Congress	
POLS 333	American Political Culture	
POLS 338	American Foreign Policy	
POLS 423	Politics, Policy and Gender	
POLS 428	American Political Thought	
POLS 437	American Presidency	
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
POLS 471	Intergovernmental Relations	
POLS 472	Local Government Politics and Administration	
SOC 311	Development of Social Theory	
SOC 325	Family, Violence, and Society	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
SOC 439	Inequalities in the Justice System	
SOC 450	Dynamics of Social Protest	
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	
WMST 367	Topics in Women's and Gender Studies	
WGSS 410	Feminist Theory and Action	
Select one Non-American History course of the following areas:		3
European		
Latin America		
Asia		
History of Science		
Health		
Environment		
Total Hours		36

Courses to total 120 credits for this degree

[1] No more than 6 credits at the 100 or 200 level.

B. European Emphasis

Code	Title	Hours
Select 18 credits from the following European history courses:		18
HIST/RELS 341	Ancient Greece	
HIST 342	Alexander the Great and the Hellenistic World	
HIST 343	The Roman Republic	
HIST/RELS 344	The Roman Empire	

HIST 350	The Age of Enlightenment: European Culture & Ideas, 1680-1800	
HIST 357	Women in Pre-Modern European History	
HIST 366	Modern European Cultural and Intellectual History, 1880-1980	
HIST 371	History of England	
HIST 372	History of England	
HIST 442	The Medieval Church: Europe in the Early and High Middle Ages	
HIST 443	The Medieval State: Europe in the High and Late Middle Ages	
HIST 445	Medieval English Constitutional and Legal History: 1066-1485	
HIST 447	The Renaissance	
HIST 448	The Reformation	
HIST 449	Tudor-Stuart Britian 1485-1660	
HIST 452	Europe in the Age of the Revolution, 1770-1880	
HIST 456	Anti-Semitism and the Holocaust	
HIST 466	Eastern Europe Since 1774	
HIST 467	Russia to 1894	
HIST 468	Russia and Soviet Union Since 1894	
Select 15 credits from the following related fields:		15
ART 302	Modern Art and Theory	
ART 303	Contemporary Art and Theory	
ENGL 267	Survey of British Literature I	
ENGL 268	Survey of British Literature II	
FLEN 307	Institutions of the European Union	
FLEN 324	Topics in German Literature in Translation (Max 6 credits)	
FREN 407	French & Francophone Literatures (Max 9 credits)	
FREN 408	French and Francophone Culture and Institutions (Max 9 credits)	
GERM 420	Topics in German Culture & Literature - Themes (Max 6 credits)	
RELS 442	The Medieval Church: Europe in the Early and High Middle Ages	
RELS 447	The Renaissance	
RELS 448	The Reformation	
SPAN 305	Culture and Institutions of Spain	
SPAN 401	Readings: Spanish Literature	
Select one course in Non-European History:		3
US		
Latin America		
Asia		
History of Science		
Health		
Environment		
Select a minor in one of the following European languages [1]		
French (p. 262)		
German (p. 262)		
Spanish (p. 265)		
Total Hours		36

Courses to total 120 credits for this degree

[1] *Students must take 20 credits of one of these languages, of which at least 9 must be upper-division. (These upper-division courses may be applied to the student's related fields requirement.)*

C. General Emphasis

Code	Title	Hours
Select 21 credits of 300 and 400-level History courses		21
Select 20 credits from related fields		20
Total Hours		41

Courses to total 120 credits for this degree

History (B.S.)

Note: Students expecting to study for an M.A. or Ph.D. degree in the humanities and social sciences should take the B.A. rather than the B.S. degree.

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.S. degree, and:

Code	Title	Hours
HIST 290	The Historian's Craft	3
HIST 495	History Senior Seminar	3
Select 12 credits of 100 - 200-Level History courses		12
Select 21 credits of 300 - 400-level History courses		21
Select 20 credits from related fields		20
Select any combination of the following:		12
Any foreign language [1]		
Courses selected from the University's general education "diversity" or "international" requirements in addition to the university-wide general ed requirements:		
Total Hours		71

Courses to total 120 credits for this degree

[1] High-school foreign language may be substituted at the rate of 4 credits per year.

History (M.A.)

Master of Arts. Major in History.

General M.A. requirements apply. This thesis and non-thesis degree is offered in all fields of history for which faculty is currently available. The work toward an M.A. degree stresses preparation for research as well as a balanced course program.

History (Ph.D.)

Doctor of Philosophy. Major in History.

The Ph.D. program is primarily oriented to research and writing to prepare the candidate for entry in a career in higher education. Among the requirements for the degree are the successful passage of comprehensive examinations, the demonstration of a reading knowledge of one foreign language, and the completion of a dissertation showing

original research. Dissertation topics are limited to the field of Historical Archaeology and are undertaken with the collaboration of anthropology faculty specializing in this field.

History Minor

Code	Title	Hours
Select 9 credits of Upper-division History courses [1]		9
Select 9 credits of History courses from the following: [2]		9
HIST 101	World History I	
HIST 102	World History II	
HIST 111	United States History I	
HIST 112	United States History II	
HIST 180	Introduction to East Asian History	
Select one History elective		3
Total Hours		21

1 At least 3 cr in U.S., Latin American, or African history and at least 3 cr in Ancient, European, or Asian history.

2 For demonstrable cause, department chair or minor advisor may allow substitution of courses numbered above 100-level.

Courses to total 21 credits for this minor

Program in Interdisciplinary Studies

Kristi Overfelt, Undergraduate Program Coordinator (113 Admin. Bldg. 83844-3154; phone 208-885-2024); Jerry McMurtry, Graduate Program Coordinator (104 Morrill Hall 83844-3017; phone 208-885-2647).

Majors

- Interdisciplinary Studies (B.A. or B.S.) (p. 268)

Minors

- Interdisciplinary Academic Minors (p. 268)

Interdisciplinary Studies Graduate Program

- Interdisciplinary Studies (M.A.) (p. 268)

Interdisciplinary Academic Minors

A student may present a minor curriculum not included among the ones listed elsewhere in this catalog. The program must include at least 24 credits and be approved by:

1. at least one faculty member from each of the participating departments,
2. the chair of one of the departments involved, and
3. in the case of minors that involve a department in the College of Letters, Arts, and Social Sciences, the Dean or Associate Dean of CLASS.

In some cases, the Dean or Associate Dean of CLASS may approve participation by departments from other colleges and universities. Participation of such departments may permitted as long as one of the participating departments in the program is a CLASS department, and other University of Idaho and CLASS requirements are met.

Interdisciplinary Studies (B.A. or B.S.)

Interdisciplinary Studies students create a curriculum that is not listed elsewhere in this catalog. The curriculum will be focused on meeting the student's particular educational and career goals and learning objectives by combining courses in two or more departments.

The program is normally developed and presented before the end of the junior year or at the time when at least 30 credits of the proposed program remain to be taken. Permission for allowing (a) presentation later in the student's academic career or (b) with fewer than 30 credits yet to be taken may be granted by the CLASS Director of Student Services. The program must be approved by (a) at least one faculty member from each of the participating departments, one of which must be in CLASS, (b) the chair of one of the CLASS departments involved, and (c) the CLASS Director of Student Services. The major requires a minimum of 50 credits of courses numbered 200 or above, including a minimum of 36 credits in courses numbered 300 or above. It is recommended, however, that majors in interdisciplinary studies complete at least 50 credits in upper-division courses. University requirements (see regulation J-3 (p. 91)) and CLASS requirements for either the B.A. or B.S. degree apply. In some cases, the Dean or Associate Dean of CLASS may approve participation by departments from other colleges and universities. Participation of such departments may permitted as long as one of the participating departments in the program is a CLASS department, and other University of Idaho and CLASS requirements are met.

Interested students should consult the CLASS dean's office in Moscow or Coeur d'Alene for further information about this program.

Interdisciplinary Studies (M.A.)

Master of Arts/Science. Major in Interdisciplinary Studies.

Admission for graduate study leading toward an M.A. or M.S. in Interdisciplinary Studies may be granted to a student who

1. has received a bachelor's degree from a regionally accredited college or university, and
2. has an undergraduate cumulative grade point average of 3.0 or higher.

The GRE General Test is required. As the application requirements are significantly different for the interdisciplinary graduate program, a student wishing to apply to an interdisciplinary degree program should contact the College of Graduate Studies to discuss his or her proposed course of study prior to applying.

With the application for admission the student must submit the following:

1. a written statement specifically describing the interdisciplinary proposal and outlining his or her rationale for undertaking an interdisciplinary program,
2. the name of a faculty member with graduate faculty status from one of the disciplines named in the proposal who has agreed to counsel the student in the proposed program and serve as major professor,
3. a proposed study plan, and
4. a program committee.

The program committee must have at least four members: at least one member from each of the principal departments or disciplines involved in the student's program and one member appointed by the dean of the College of Graduate Studies. At least one half of the program committee must be members of the Graduate Faculty.

The objective of the graduate interdisciplinary studies degree is to provide a student with the opportunity to design a specific program of study when the student's needs or desires do not fall within an established graduate program. The M.A. or M.S. degree in interdisciplinary studies is a rigorous program that integrates existing graduate level coursework from two or more graduate programs. Students may choose between the Master of Arts and the Master of Science degree options and either option can be non-thesis or thesis. A student choosing the thesis option may use up to six credits of INTR 500 toward the degree. Of the minimum 30 credits required, at least 18 must be at the 500-level. The remainder may be at the 400-level. In addition to graduate courses drawn from two or more departments, some of the courses from the Interdisciplinary Studies "Courses" section of the Catalog may be useful. Students majoring in Interdisciplinary Studies should register for INTR 500 for their thesis research, INTR 502 for directed study, INTR 599 for research not directly related to a thesis, and INTR 501 Seminar for seminar. Your major professor or department administrative assistant will contact the College of Graduate Studies to enter these courses on the class schedule. No more than ten credits in total of directed study, special topics, or seminar will be allowed.

There is no typical study plan for an interdisciplinary studies degree program. Each student seeking the master degree in interdisciplinary studies must, with the counsel of a major professor, develop a study plan which blends the two graduate programs and supports the students interdisciplinary proposal.

The proposed study plan must be unanimously approved by the student's program committee and the dean of graduate studies.

The program is administered by the department of which the student's major professor is a member. For both the thesis and non-thesis options, there must be a comprehensive examination that evaluates the student's ability to integrate all disciplines included in the program and to respond logically to related questions of a general nature. The general university credit requirements for the M.A. and M.S. degrees apply to the interdisciplinary studies degree as well; see the College of Graduate Studies (p. 232) section for the requirements applicable to all M.A. and M.S. degrees.

Procedural details for developing, receiving approval for, and carrying out an interdisciplinary degree program are available from the College of Graduate Studies.

School of Journalism and Mass Media

Robin Johnson, Director (347 Admin. Bldg 83844-3178; phone 208-885-6458).

Film and Television Studies: Russell Meeuf, Director.

The University of Idaho School of Journalism and Mass Media is Idaho's only accredited program for the study of journalism, mass communication and related fields. The school offers bachelor's degrees in five fields: advertising, broadcasting and digital media, film and television studies, journalism, and public relations.

Students with degrees from the school pursue careers with advertising agencies, radio and television stations and networks, film and video production companies, cable and satellite operations, newspapers and magazines, other print and online media, and public relations firms. They also work as public information specialists for non-profit agencies, private corporations and within the government. Many graduates seek advanced degrees in law, public administration, strategic communication, and the humanities and social sciences.

The school's curriculum is based on a premise that journalists, broadcasters, film and television producers, public relations professionals and advertising executives should be broadly educated. Accordingly, students must take at least 75 of the 120 credits needed for graduation outside the school. As a unit of the College of Letters, Arts and Social Sciences (p. 249), the school also provides conceptual courses to students in other fields of study as well as university General Education core courses related to the role of media in a global society.

Students seeking the B.A. degree are required to demonstrate proficiency in a foreign language; those seeking the B.S. degree must complete an 18-credit minor or area of emphasis.

Students enrolled in a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media major may not double major in any of these four programs. Students enrolled in the Film and Television Studies major may not double major in Broadcasting and Digital Media.

Students enrolled in a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media major may not pursue a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media minor. Students enrolled in the Film and Television Studies major may not pursue a minor in Broadcasting and Digital Media.

Many students in the School of Journalism and Mass Media supplement their academic experience by working for the independent student media outlets on campus, including the Argonaut newspaper, the Blot magazine, and KUOI-FM. Students are also strongly encouraged to pursue internships at professional media organizations throughout the region.

The school has been accredited since 2014 by the Accrediting Council on Education in Journalism and Mass Communications (ACEJMC), the agency responsible for the evaluation of professional journalism and mass communications programs in colleges and universities. The council found the UI's School of Journalism and Mass Media in full compliance with nine standards dealing with governance, faculty qualifications, diversity, curriculum, facilities and student services. For more information about the benefits of accreditation, please see: www.acejmc.org/accreditation/value-of-accreditation/ (http://www.acejmc.org/accreditation/value-of-accreditation).

Majors

- J (p. 270)ournalism and Mass Media Undergraduate Curricular Requirements (p. 270)
- Advertising (B.A. or B.S.) (p. 270)
- Broadcasting and Digital Media (B.A. or B.S.) (p. 271)
- Film and Television Studies (B.A. or B.S.) (p. 271)

- Journalism (B.A. or B.S.) (p. 272)
- Public Relations (B.A. or B.S.) (p. 272)

Minors

- Advertising Minor (p. 270)
- Broadcasting and Digital Media Minor (p. 271)
- Journalism Minor (p. 272)
- Public Relations Minor (p. 273)

Journalism and Mass Media Undergraduate Curricular Requirements

A minimum cumulative university grade-point average of 2.50 is required of students in order to graduate with a degree from the School of Journalism and Mass Media.

A student who graduates with a major in the School of Journalism and Mass Media must complete a minimum of 120 credits of which a maximum of 12 credits can come from experiential courses (JAMM 497, JAMM 498, JAMM 499). Students can receive no more than 6 credit hours for JAMM 498 experience; students can repeat JAMM 498 one time. Students must obtain approval from the School of Journalism and Mass Media to apply internship credit toward a degree from the school.

Majors cannot apply more than 48 hours of courses in Journalism and Mass Media toward the 120-credit degree requirement and are required to take no fewer than 60 hours in the liberal arts and sciences. Majors may count no more than 8 hours of courses in Physical Education activity courses (PEB 106, PEB 107 and PEB 108) toward the 120 credits required for the degree.

Candidates for the B.S. degree are required to complete a second major, an academic minor or area of emphasis of at least 18 credits outside the School of Journalism and Mass Media. The emphasis area must be approved by the student's academic advisor.

JAMM 100, JAMM 121 and JAMM 122 must be completed with a grade of C or better before a major may enroll in any other Journalism and Mass Media courses. All students must complete a minimum of 58 credits before enrolling in any upper-division course (numbered 300 or above) offered by the school.

No more than 18 credits of journalism and mass media courses from other institutions may be applied to a degree from the School of Journalism and Mass Media.

A student may not double major in the School of Journalism and Mass Media.

Courses required in all majors in the School of Journalism and Mass Media (except Film & Television Studies):

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Multimedia Storytelling	1
JAMM 341	Mass Media Ethics	3
JAMM 448	Law of Mass Media	3
Select two courses from the following:		6
JAMM 339	Crime and the Media	
JAMM 340	Cultural Diversity and the Media	
JAMM 378	American Television Genres	
JAMM 379	Hollywood Portrayals of Journalists	
JAMM 426	Narrative Journalism	
JAMM 440	Critical Issues in Mass Media	
JAMM 443	Media Management and Economics	
JAMM 444	Mass Media and Public Opinion	
JAMM 445	History of Mass Media	
JAMM 446	Women in the Media	
JAMM 477	Documentary Film	
JAMM 490	Global Media	
Select six credits of electives in Journalism and Mass Media [1]		6
Total Hours		27

[1] Electives: Three must be upper division credits.
Students in the School are required to complete at least 15 credit hours within one of the four majors: Advertising; Broadcasting and Digital Media; Journalism; or Public Relations.

Advertising (B.A. OR B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 270)		27
Major Requirements		15
Total Hours		42

Major Requirements

Code	Title	Hours
JAMM 252	Introduction to Integrated Media Campaigns	3
JAMM 267	Introduction to Media Design	3
JAMM 367	Social Media Management and Analytics	3
JAMM 466	Media Campaign Strategy	3
JAMM 468	Advanced Media Design	3
Total Hours		15

Advertising majors are encouraged to apply for the Advertising Competition Team, JAMM 469.
Courses to total 120 credits for this degree

Advertising Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Multimedia Storytelling	1
JAMM 252	Introduction to Integrated Media Campaigns	3
JAMM 267	Introduction to Media Design	3
Select at least two of the following courses:		6
JAMM 341	Mass Media Ethics	
JAMM 367	Social Media Management and Analytics	

JAMM 444	Mass Media and Public Opinion	
JAMM 448	Law of Mass Media	
JAMM 468	Advanced Media Design	
Total Hours		19

Courses to total 19 credits for this minor

Broadcasting and Digital Media (B.A. OR B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 270)		27
Major Requirements		16
Total Hours		43

Major Requirements

Code	Title	Hours
JAMM 275	Introduction to Broadcasting and Digital Media Production	4
Courses selected from the following:		8-9
JAMM 322	Broadcast News	
JAMM 323	Sports Reporting	
JAMM 374	Digital Media Field Production	
JAMM 422	Advanced Broadcast News	
JAMM/THE 447	Screenwriting	
JAMM 472	Photojournalism	
JAMM 473	Lighting for Digital Media Production	
JAMM 474	Video Editing	
JAMM 475	Advanced Digital Media Production	
JAMM 476	Advanced Digital Media Production II	
JAMM 478	Broadcast/Cable/Web Programming	
Course selected from the following:		3
JAMM 378	American Television Genres	
JAMM 379	Hollywood Portrayals of Journalists	
JAMM/ENGL 477	Documentary Film	
JAMM 478	Broadcast/Cable/Web Programming	
Total Hours		15-16

Courses to total 120 credits for this degree

Broadcasting and Digital Media Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Multimedia Storytelling	1
JAMM 275	Introduction to Broadcasting and Digital Media Production	4
Select additional Broadcasting or Digital Media courses to meet specific career goals		8-9
Total Hours		19-20

Courses to total 19 credits for this minor

Film and Television Studies (B.A. OR B.S.)

Note: Students must have a 2.5 GPA to major and must attain a 2.5 GPA to graduate with the Film and Television Studies degree.

Prerequisite: ENGL 230 must be completed with a 'C' or above before enrolling in other courses in the sequence.

Film and Television Studies is an interdisciplinary degree taught on the film school model, whereby students will learn how to think critically and historically about film and culture while learning the fundamentals of film writing and film making. This degree prepares students to meet the growing demand for digitally fluent and professionally trained multimedia storytelling across the media industries, as well as in public institutions, government, and business.

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
ENGL 221	History of Film 1895-1945	3
ENGL 222	History of Film 1945-Present	3
ENGL 230	Introduction to Film Studies	3
ENGL 231	Introduction to Screenwriting	3
JAMM 275	Introduction to Broadcasting and Digital Media Production	4
Select 5 credits of additional Production:		5
ENGL 447	Screenwriting	
JAMM 374	Digital Media Field Production	
JAMM 473	Lighting for Digital Media Production	
JAMM 474	Video Editing	
Select 6 credits of History Culture and Theory courses, 3 of which must be in under-served, non-canonical, or international film; reflecting cultural diversity:		6
AIST 320	Native American & Indigenous Film	
ENGL 329	Studies in Literature and Film	
ENGL 432	Seminar in Film Theory and Criticism	
ENGL 477	Documentary Film	
FLEN 315	French/Francophone Cinema in Translation	
FLEN 326	Chinese Cinema in Translation	
FLEN 322	German Culture through Film	
FLEN 331	Japanese Anime	
FLEN 390	Representation and Reality in Spanish Cinema	
FLEN 391	Hispanic Film	
FREN 419	French & Francophone Cinema	
HIST 414	History and Film	
GERM 307	German Film	
JAMM 339	Crime and the Media	
JAMM 378	American Television Genres	
JAMM 445	History of Mass Media	

PHIL 221	Philosophy in Film	
SPAN 423	Culture and Identity in Spanish Cinema	
SPAN 424	Human Rights and Hispanic Cinema	
Select 12 additional credits of electives from the following,or other courses if approved by director of Film & Television Studies:		12
AIST 320	Native American & Indigenous Film	
ENGL 432	Seminar in Film Theory and Criticism	
ENGL 329	Studies in Literature and Film	
ENGL 447	Screenwriting	
ENGL 477	Documentary Film	
FLEN 315	French/Francophone Cinema in Translation	
FLEN 322	German Culture through Film	
FLEN 326	Chinese Cinema in Translation	
FLEN 390	Representation and Reality in Spanish Cinema	
FLEN 391	Hispanic Film	
FREN 419	French & Francophone Cinema	
GERM 307	German Film	
HIST 414	History and Film	
JAMM 339	Crime and the Media	
JAMM 374	Digital Media Field Production	
JAMM 378	American Television Genres	
JAMM 379	Hollywood Portrayals of Journalists	
JAMM 473	Lighting for Digital Media Production	
JAMM 474	Video Editing	
PHIL 221	Philosophy in Film	
SPAN 423	Culture and Identity in Spanish Cinema	
SPAN 424	Human Rights and Hispanic Cinema	
THE 102	Introduction to Design	
THE 105	Basics of Performance I	
THE 106	Basics of Performance II	
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
THE 305	Intermediate Acting I	
THE 306	Intermediate Acting II	
THE 410	Costume Design II	
THE 465	Advanced Scene Design	
THE 471	Directing	
Senior Experience		6
JAMM 475	Advanced Digital Media Production	
JAMM 476	Advanced Digital Media Production II	
Total Hours		45

Courses to total 120 credits for this degree

Journalism (B.A. OR B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 270)		27
Major Requirements		15
Total Hours		42

Major Requirements

Code	Title	Hours
JAMM 225	Reporting I	3
JAMM 327	Reporting II	3
Select 9 credits from the following:		9
JAMM 322	Broadcast News	
JAMM 323	Sports Reporting	
JAMM 324	News Editing and Production	
JAMM 325	Publications Editing	
JAMM 328	Science Writing	
JAMM 422	Advanced Broadcast News	
JAMM 425	Feature Article Writing	
Total Hours		15

Courses to total 120 credits for this degree[1]

[1] Journalism majors are encouraged to pursue their studies across media, including print, broadcast and online journalism.

Journalism Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Multimedia Storytelling	1
JAMM 225	Reporting I	3
JAMM 341	Mass Media Ethics	3
JAMM 448	Law of Mass Media	3
Select One Journalism-Related course to meet specific career goals		3
Total Hours		19

Courses to total 19 credits for this minor

Public Relations (B.A. OR B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 270)		27
Major Requirements		15
Total Hours		42

Major Requirements

Code	Title	Hours
JAMM 225	Reporting I	3
JAMM 252	Introduction to Integrated Media Campaigns	3
JAMM 350	Public Relations Writing and Production	3
JAMM 458	Public Relations Research and Case Studies	3

JAMM 466	Media Campaign Strategy	3
Total Hours		15

Courses to total 120 credits for this degree

Public Relations Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Multimedia Storytelling	1
JAMM 252	Introduction to Integrated Media Campaigns	3
JAMM 341	Mass Media Ethics	3
Select Two Public Relations-Related courses to meet specific career goals		6
Total Hours		19

Courses to total 19 credits for this minor

Program in Latin American Studies

Lori Celaya, Ashley Kerr, Co-Directors.

The program in Latin American studies is a multidisciplinary major leading to the B.A. degree. The appeal of this field of study has greatly increased over the last decade, due to the region's growing economic and political importance. A degree in the major is appropriate for employment in many fields, among which are the diplomatic service and overseas business as well as graduate study in various disciplines. Students electing the major will also broaden their awareness of non-Western cultures and history.

Majors

- Latin American Studies (B.A.) (p. 273)

Latin American Studies (B.A.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general requirements for the B.A. degree, including Spanish for the foreign language requirement, and:

Code	Title	Hours
LAS 306	Culture and Institutions of Latin America	3
FLEN 391	Hispanic Film	3
or FLEN 394	Latin American Literature in Translation	
HIST 438	Modern Mexico and the Americas	3
or HIST 439	Modern Latin America	
Select 27 credits of the following courses: [1]		27
ANTH 102	Cultural Anthropology	
ANTH 462	Human Issues in International Development	
ECON 447	International Development Economics [2]	
HIST 315	Comparative African-American Cultures	
HIST 440	Social Revolution in Latin America	
HIST 441	Slavery and Freedom in the Americas	
IS 320	Model United Nations	
IS 321	UN and Related Agencies	
NRS 493	International Land Preservation and Conservation Systems	
POLS 449	World Politics and War	
POLS 480	Politics of Development	
SPAN 402	Readings: Spanish American Literature	
SPAN 404	Special Topics	
SPAN 409	Modern Latin American Society	
SPAN 413	Spanish American Short Fiction	
SPAN 419	Latin America Theatre Through Literature	
SPAN 421	Bilingual and Bicultural Identities	
SPAN 422	Mexican Culture through Cinema	
SPAN 424	Human Rights and Hispanic Cinema	
Total Hours		36

Courses to total 120 credits for this degree

1 *Students may also take the optional courses listed above, at least six of which must be Spanish credits.*

2 Students who elect to take ECON 447 International Development Economics/LAS 447 International Development Economics are strongly urged to take HIST 101 World History I-HIST 102 World History II (History of Civilization) in their freshman year.

Lionel Hampton School of Music

Vanessa Sielert, Director (205 Music Bldg. 83844-4015; phone 208-885-6231; music@uidaho.edu; www.uidaho.edu/music).

The Lionel Hampton School of Music, so designated in 1987 in honor of the eminent American jazz musician, is an accredited institutional member of the National Association of Schools of Music. Established as a department in 1893, it was elevated to school status in 1969.

The courses and curricula in music seek to prepare elementary, secondary, and college teachers of music; to train professional musicians; to enrich the cultural environment for students and provide liberal-arts instruction; and to engage in research in music performance and teaching for the general benefit of the public and the discipline of music.

Students in this school learn by performing, listening, analyzing, and creating music. Emphasis is on the understanding of musical styles and techniques of all eras, including contemporary music. Musical studies balance the aesthetic and the practical, with ample opportunity for exploration and self-reliance.

The formal undergraduate curricula of the School of Music consist of degree programs in the following areas:

Bachelor of Music in Performance

- Specialization in voice, piano, guitar, or any orchestral instrument.

Bachelor of Music in Composition

Bachelor of Music in Music Education

- Specialization in vocal music education or instrumental music education, with the option of adding a supplemental minor in vocal and instrumental music education.

Bachelor of Music in Music Business

- Core studies in music combined with studies in accounting, economics, statistics, management, and marketing, with emphases in Arts Administration, Entrepreneurship, or General Business.

Bachelor of Arts in Music

- Emphasis in music theory, music history, or applied music. Applied music study can be in any of the areas of specialty listed under the Bachelor of Music in Performance.

Bachelor of Science in Music

- Emphasis in music theory, music history, or applied music. Applied music study can be in any of the areas of specialty listed under the Bachelor of Music in Performance.

The B.Mus. degree is professionally oriented and is the normal preparation for graduate study in music or for teacher education. The B.A. and B.S. degrees emphasize a broad liberal-arts education. Acceptance to the B.Mus., B.A., or B.S. degree programs requires an audition. The School of Music also offers minors in music, jazz studies, vocal and instrumental music education (as a supplement for music education majors), and musical theatre. The ensembles and performing groups sponsored by the School of Music are open to all students, regardless of major.

The Music Building houses faculty studios, ensemble rehearsal areas, classrooms, an electronic music lab, a music education materials center, and a recital hall. Individual practice rooms are available in nearby Ridenbaugh Hall. Additional faculty offices are located in Blake House. Recording, radio-television, language listening lab, and computer facilities of the campus are also used by music students. In addition to organ, harpsichord, and piano practice instruments, the school maintains two performance pipe organs, three concert grand pianos, and a concert harpsichord.

The School of Music offers degrees at the master's level; Master of Music degrees are available in music education, performance, composition, choral conducting, collaborative piano, and piano pedagogy and performance studies. The Master of Arts option is in music history. Acceptance into the M.Mus. degree programs requires an audition, except in music education, which requires a supplementary information packet.

The school offers prospective graduate students a wide range of individual and group instruction opportunities as preparation for professional careers in music either as performers, composers, scholars, or music educators. Study is enriched through participation in recitals in addition to participation in both small and large vocal and instrumental ensembles.

Admission to the Master of Music program varies by area of concentration. Please see the Lionel Hampton School of Music website (www.uidaho.edu/class/music/graduate) for the requisite application materials listed by concentration. Admission to the M.A. or M.Mus. program in this school normally requires a baccalaureate degree in music from an accredited institution. During the first semester of enrollment, a supervisory committee and a chair of that committee will be appointed. Students are encouraged, and in some cases required, to participate in one organized ensemble each academic session in residence.

Majors

- Music (B.A. or B.S.) (p. 276)
- Music Education (B.Mus.) (p. 277)
- Music: Composition (B.Mus.) (p. 279)
- Music: Business (B.Mus.) (p. 278)
- Music: Performance (B.Mus.) (p. 280)

Minors

- Jazz Studies Minor (p. 275)
- Music Minor (p. 278)
- Musical Theatre Minor (p. 281)
- Vocal-Instrumental Music Education Minor (p. 281)

Music Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the School of Music. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Music (M.A.) (p. 276)
- Music (M.Mus.) (p. 276)

General Requirements for all B.A., B.S., and B.Mus. Degrees

Minimum Grade Requirement

A music student, either major or minor, must achieve a minimum grade of C in each music course, either resident or transfer, which is applicable to a degree program in music before the student will be eligible for graduation.

Ensemble Participation

An undergraduate music major must:

1. earn a minimum of eight credits in ensemble participation to be eligible for graduation and
2. enroll in an ensemble during each semester of full-time study.

Various requirements are contained in the specific curricula. For curricular purposes, "major ensemble" is defined to mean:

Code	Title	Hours
MUSA 116/316	Concert Choir--Vandaleers	1
MUSA 117/317	University Choir	1
MUSA 119/319	Marching Band	1-3
MUSA 120/320	Wind Ensemble	1
MUSA 121/321	Concert Band	1
MUSA 122/322	Orchestra	1
Other ensembles consist of:		
(Listed in some curricula under "Chamber Music")		
MUSA 118/318	Jazz Choir	1
MUSA 315	Collaborative Piano	1
MUSA 323	Jazz Ensemble	1
MUSA 365	Chamber Ensemble	1
MUSA 380	Opera/Musical Theatre Studio	1-3

For students in the B.A. or B.S. in Applied Music, the following minimum requirements apply depending on the primary applied area of the student:

- **Orchestral Instrument:** six credits in instrumental major ensemble and two additional credits in any instrumental ensemble.
- **Voice:** six credits in vocal major ensemble and two additional credits in any vocal ensemble.
- **Keyboard:** two credits in any major ensemble, four credits in MUSA 315 Accompanying, and two credits in MUSA 365 Chamber Ensemble.
- **Guitar:** four credits in any major ensemble and four credits in MUSA 365-02 Chamber Ensemble: Guitar Ensemble.

For students in the B.Mus. in Music: Business, the following minimum requirements apply depending on the primary applied area of the student:

- **Orchestral Instrument:** four credits in instrumental major ensemble and four additional credits in any instrumental ensemble.
- **Voice:** four credits in vocal major ensemble and four additional credits in any vocal ensemble.
- **Keyboard:** two credits in any major ensemble, two credits in MUSA 315 Accompanying, and four credits in any ensemble.
- **Guitar:** four credits in any major ensemble and four credits in MUSA 365-02 Chamber Ensemble: Guitar Ensemble.

Transfer students must have a minimum of four semesters of ensemble participation at UI, at least two of which must be in a major ensemble.

Convocation-Recital Attendance

Because listening experiences constitute an area of major importance in the study of music, all music majors and music minors are required to register for MUSX 140; music majors must attend 10 recitals per semester for seven semesters and music minors must attend 10 recitals per semester for two semesters. Students must attend a full concert or program in order for it to be counted toward convocation-recital requirements. Recital credit will not be granted for those performances in which a student participates. In addition, music majors must attend the weekly convocation series (studio class, area recital, and convocation). Transfer students are expected to enroll in MUSX 140 during their first registration, and to receive a passing grade in a specific number of semesters (to be determined when the student's program is set up). Transfer students must have a minimum of two semesters of convocation at UI.

Upper-Division Standing (UDS)

For a B.Mus., B.A. and B.S. music major to enroll in MUSA 324, MUSA 334, or MUSC 425, the student must have been granted upper-division standing (UDS). Students applying for UDS must:

1. have completed with a "C" or better, or be currently enrolled in one semester of MUSA 115 and three semesters of MUSA 124 or MUSA 134 depending on the student's degree program, MUSC 242, MUSH 111 and the courses listed in one of the following scenarios:
   a. MUSA 246 and MUSC 240;
   b. MUSA 146 and MUSC 240; or
   c. MUSA 246 and MUSC 140
2. have passed a special jury examination demonstrating mastery of the fundamentals of the student's major area of performance/composition and the potential to continue improving in a manner that will lead to the successful completion of performance/composition requirements of the degree and major emphasis (the jury examination requirement must be met, regardless of double majors, before a student can enroll in MUSA 324 or MUSA 334).

Transfer students with at least two years of college study as a music major and double majors with one major outside of music may apply for UDS if they have at least one year of music theory, aural skills and piano, one semester of music history, four semesters of studio instruction at the music major level and the approval of the studio instructor or area coordinator in the case of voice and keyboard. An Upper Division Standing jury examination presented after the second week will not count towards the semester in which it was presented. Students who fail to pass the UDS requirements within two tries are ineligible to continue to pursue a music major.

In order to register for upper-division music education courses (not including instrumental techniques courses), an undergraduate music education major must:

Diagnostic Exam in Theory and Aural Skills

The goal of these exams, required for all transfer students whose major is music, is to place transfer students in the appropriate level of music theory, aural skills, and piano according to their abilities regardless of their prior training; this exam is not available to first-year students. Study guides are available on the web. The exams are given during the first week of classes each semester, as needed. The exam will not be used for "advanced placement" or "credit by examination," as the regulations regarding these procedures are covered in regulation D-4 (p. 83). Written evaluation of each student's achievement will be placed in his or her advising file, and students will be admitted to required courses at their ability level.

Transfer Credits

Transfer credits will be accepted at the upper-division level only if taken at the upper-division level from the original institution (i.e., a 100- or 200-level course will not transfer as a 300- or 400-level course requirement). The applicability of these credits to the student's program of study is determined by the Lionel Hampton School of Music. If a transfer student has taken a 100-level survey of music course, the student may use this course in lieu of MUSH 111, if he/she can demonstrate knowledge of world music. In order for a student to meet world music competency, he/she may:

1. Participate in an ensemble such as MUSA 365
2. Take MUSH 420

Jazz Studies Minor

Code	Title	Hours
MUSA 210	Jazz Improvisation	2
MUSA 212	Introduction to Jazz Piano I	1
MUSA 213	Introduction to Jazz Piano II	1
MUSA 410	Advanced Jazz Improvisation	2
MUSA 492	Elective Half Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2

MUSC 329	Theoretical Basis of Jazz	2
MUSH 410	Studies in Jazz History	3
Select 7 credits of Jazz electives from the following:		7
Electives in Jazz Ensembles		
Jazz Combos		
MUST 465	Jazz Band Rehearsal Techniques	
Total Hours		26

Courses to total 26 credits for this minor

Music (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)), the General Requirements for B.A. or B.S. Music Degrees (p. 274), the CLASS requirements for the B.A. or B.S. degree, and:

Code	Title	Hours
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	1
MUSC 240	Aural Skills IV	1
MUSC 241	Theory of Music III	3
MUSC 242	Theory of Music IV	3
MUSH 111	Introduction to Music Literature	3
MUSH 321	Music in Western Civilization I	3
MUSH 322	Music in Western Civilization II	3
MUSH 323	Music in Western Civilization III	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required.)	0
Emphases		
Select one of the following emphases:		24
Applied Music (p. 276)		
History and Literature (p. 276)		
Theory (p. 276)		
Total Hours		54

A. Applied Music Emphasis

Code	Title	Hours
MUSA 115	Studio Instruction	2
MUSA 124	Studio Instruction (6 credits are required in major instrument or voice)	6
MUSA 324	Studio Instruction (8 credits are required in major instrument or voice)	8
MUSA 490	Half Recital	0
Select MusA Ensembles in 8 different semester		8
Total Hours		24

Courses to total 120 credits for this degree and include at least 66 credits in non-music courses

Note: Students whose primary instrument is voice must substitute MUSX 283-MUSX 284 Diction for Singers for four credits of non-music electives, thus reducing the non-music credits from 66 to 62.

B. History and Literature Emphasis

Code	Title	Hours
MUSA 114	Studio Instruction (4 credits are required)	4
MUSA 314	Studio Instruction (4 credits are required in major instrument or voice)	4
MUSH 480	Senior Thesis in Music History I	1
MUSH 481	Senior Thesis in Music History II	1
Select 2 credits of 300 or 400-Level MusC electives		2
Select 4 credits of 300 or 400-Level MusH electives		4
Select MusA Ensembles in 8 different semesters [1]		8
Total Hours		24

Courses to total 120 credits for this degree and include at least 66 cr in non-music courses

1 *Keyboard majors: of these eight, two semesters must be* MUSA 315 Collaborative Piano.
Guitar majors: of these eight, two semesters must be MUSA 365 Chamber Ensemble.

C. Theory Emphasis

Code	Title	Hours
MUSA 114	Studio Instruction (4 credits are required)	4
MUSA 314	Studio Instruction (4 credits required in major instrument or voice)	4
MUSC 442	Musical Analysis	2
MUSC 480	Senior Thesis in Music Theory I	1
MUSC 481	Senior Thesis in Music Theory II	1
Select 4 credits of 300 or 400-level MusC Electives		4
Slect MusA Ensembles in eight different semesters: [1]		8
Total Hours		24

Courses to total 120 credits for this degree and include at least 66 cr in non-music courses

1 *Keyboard majors: of these eight, two semesters must be* MUSA 315 Collaborative Piano.
Guitar majors: of these eight, two semesters must be MUSA 365 Chamber Ensemble.

Music (M.A.)

Master of Arts. Major in Music.

General M.A. requirements apply. Applicants for the M.A. degree may concentrate in music history. A reading competency in one foreign language is required. Admission to the program is by permission of the music history faculty.

Music (M.Mus.)

Master of Music. Major in Music.

Applicants for the M.Mus. degree may concentrate in music education; performance (with degree patterns in brass, choral conducting, keyboard,

percussion, strings, voice and woodwinds); composition; piano pedagogy and performance studies; or collaborative piano. Admission to the Master of Music program varies by the area of concentration. Please see the Lionel Hampton School of Music website (http://www.uidaho.edu/class/music/graduate/applicationprocedures) for the requisite application materials listed by concentration. Except for students enrolled in the Master of Music in Music Education degree, all graduate music students must complete at least 18 semester hours of credit towards the Master of Music degree in residence on the University of Idaho Moscow campus.

Music Education (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
EDCI 201	Contexts of Education	3
EDCI 301	Lrng, Dvlpmnt, & Assessment	3
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
MUSA 115	Studio Instruction	2
MUSA 124	Studio Instruction (6 credits are required)	6
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 324	Studio Instruction (6 credits are required)	6
MUSA 387	Conducting I	2
MUSA 487	Conducting II	2
MUSA 490	Half Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	1
MUSC 240	Aural Skills IV	1
MUSC 241	Theory of Music III	3
MUSC 242	Theory of Music IV	3
MUSC 328	Instrumental and Choral Arranging	2
MUSH 111	Introduction to Music Literature	3
MUSH 321	Music in Western Civilization I	3
MUSH 322	Music in Western Civilization II	3
MUSH 323	Music in Western Civilization III	3
MUST 382	General Music Methods	3
MUST 383	Principles of Music Teaching	3
MUST 432	Practicum: Music Teaching	11
MUST 445	Proseminar in Music Teaching	1
MUSX 101	Orientation for Music Majors	0
PSYC 101	Introduction to Psychology	3
MUSX 140	Recital Attendance (Seven semesters required)	0
Emphases		
Select one of the following Emphases:		19-21
Instrumental (p. 277)		
Vocal (p. 277)		
Total Hours		103-105

A. Instrumental Emphasis

Code	Title	Hours
MUSA 245	Piano Class for Music Majors/Minors	1
MUST 251	String Instrument Techniques	1
MUST 253	Brass Instrument Techniques	1
MUST 254	Percussion Techniques	1
MUST 255	Woodwind Techniques	1
MUST 256	String Techniques and Orchestral Literature	1
MUST 352	Double Reed Techniques	1
MUST 386	Instrumental Music in the Secondary School	3
MUST 465	Jazz Band Rehearsal Techniques	2
MUST 466	Marching Band Techniques	1
Select 6 credits of Major Ensembles [1]		6
Select two different semesters of other ensembles chosen from: [2]		2
MUSA 119	Marching Band	
MUSA 121	Concert Band	
MUSA 122	Orchestra	
MUSA 319	Marching Band	
MUSA 321	Concert Band	
MUSA 322	Orchestra	
MUSA 320	Wind Ensemble	
MUSA 323	Jazz Ensemble	
MUSA 365	Chamber Ensemble	
Total Hours		21

Courses to total 131 credits for this degree

[1] The major ensemble requirement must be completed in six different semesters;

- ***wind and percussion majors*** *must register for three different semesters of MUSA 119/MUSA 319 Marching Band and three different semesters of MUSA 121/MUSA 321 Concert Band, or MUSA 320 Wind Ensemble.*
- ***Wind and percussion majors*** *may, by audition, substitute two semesters of MUSA 122/MUSA 322 Orchestra for MUSA 121/MUSA 321 Concert Band, or MUSA 320 Wind Ensemble.*
- ***String majors*** *must register for six different semesters of MUSA 122/MUSA 322 Orchestra and one semester of MUSA 119/MUSA 319 Marching Band.*
- ***Keyboard and guitar majors*** *must enroll in one semester of MUSA 119/MUSA 319 Marching Band.*
- ***Keyboard and guitar majors*** *may substitute one semester of MUSA 323 Jazz Band or MUSA 365 Jazz combo, a prerequisite for MUST 465 for one semester of major ensemble. They may enroll in large vocal ensembles to satisfy the remaining major ensemble requirements.*
- ***Wind, percussion, keyboard, and string majors*** *must have a total of four semesters of major ensemble participation (as defined above) at UI.*

[2] *Students whose major applied medium is keyboard must select MUSA 315 to satisfy this requirement.*

B. Vocal Emphasis

Code	Title	Hours
MUSA 114	Studio Instruction [1]	1
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 380	Opera/Musical Theatre Studio	1-3
MUST 385	Choral Music in the Secondary School	3
MUST 435	Pedagogy & Materials	2
MUSX 283	English and Italian Diction for Singers	2

MUSX 284	German and French Diction for Singers	2
Select 6 different semesters of Major Ensembles chosen from:		6
MUSA 116	Concert Choir--Vandaleers	
MUSA 117	University Choir	
MUSA 118	Jazz Choir	
MUSA 316	Concert Choir--Vandaleers	
MUSA 317	University Chorus	
Select one semester of other ensembles chosen from:		1
MUSA 116	Concert Choir--Vandaleers	
MUSA 117	University Choir	
MUSA 118	Jazz Choir	
MUSA 316	Concert Choir--Vandaleers	
MUSA 317	University Chorus	
MUSA 318	Jazz Choir	
MUSA 365	Chamber Ensemble	
MUSA 380	Opera/Musical Theatre Studio	
Total Hours		19-21

[1] Voice majors must successfully complete MUSA 246 before enrolling in MUSA 114.

Students in this major must take the required MUSA 115, MUSA 124 and MUSA 324 Studio Instruction courses in voice.

Courses to total 130 credits for this degree

Music Minor

Code	Title	Hours
MUSA 114	Studio Instruction (4 cr are required)	4
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSI 100	Introduction to Music	3
or MUSH 111	Introduction to Music Literature	
MUSX 140	Recital Attendance (Two semesters required)	0
Select 4 credits of Music electives [1]		4
Total Hours		21

Courses to total 21 credits for this minor

[1] *Ensemble participation is recommended to meet the music electives requirement. Two credits of a major vocal ensemble (University Chorus or Vandaleers) are required for a music minor whose studio instruction is in voice.*

Music: Business (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	2
ECON 202	Principles of Microeconomics	3-4
or ECON 272	Foundations of Economic Analysis	
MUSA 115	Studio Instruction	2
MUSA 124	Studio Instruction (3 Courses of MUSA 124 to total 6 cr should be taken)	6
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 324	Studio Instruction (3 courses of MUSA 324 to total 6 cr should be taken)	6
MUSA 490	Half Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	1
MUSC 240	Aural Skills IV	1
MUSC 241	Theory of Music III	3
MUSC 242	Theory of Music IV	3
MUSH 111	Introduction to Music Literature	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required)	0
MUSX 410	Current Topics in Music Business	3
MUSX 498	Internship	1-3
Select three courses from the following:		9
MUSH 201	History of Rock and Roll	
MUSH 321	Music in Western Civilization I	
MUSH 322	Music in Western Civilization II	
MUSH 323	Music in Western Civilization III	
MUSH 330	History of Music Theatre	
MUSH 410	Studies in Jazz History	
Select MusA Ensembles in 8 different semesters [1]		8
Emphases		
Select one of the following emphases:		27-30
Arts Administration (p. 278)		
Entrepreneurship (p. 279)		
General Business (p. 279)		
Total Hours		90-96

[1] *MUSA Ensemble in eight different semesters. See "Ensemble participation* (p. 274)*" for requirements.*

A. Arts Administration Emphasis

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
FIN 301	Financial Resources Management	3
MHR 311	Introduction to Management	3
MKTG 321	Marketing	3
ORGS 210	Introduction to Organizational Sciences	1
Select 12 credits from the following:		12
MHR 411	Acquiring Human Capital	
MHR 417	Deploying and Developing Human Capital	

ORGS 155	Financial Literacy	
ORGS 305	Nonprofit Organizations	
ORGS 320	Budgeting for Small Organizations	
ORGS 321	Workplace Motivation	
ORGS 322	Workplace Soft Skills	
ORGS 407	Advanced Nonprofit Organizations	
ORGS 415	Planning Professional Conferences and Events	
PSYC 441	Human Relations in the Workplace	
Total Hours		28

B. Entrepreneurship Emphasis

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
ACCT 482	Enterprise Accounting	3
FIN 301	Financial Resources Management	3
MHR 311	Introduction to Management	3
MKTG 321	Marketing	3
ENTR 414	Entrepreneurship	3
ENTR 415	New Venture Creation	3
Select 3 credits from the following courses:		3
MIS 353	Application Development	
OM 378	Project Management	
BUS 429	Vandal Solutions	
OM 456	Quality Management	
Total Hours		27

C. General Business Emphasis

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
BUS 190	Integrated Business and Value Creation	3
FIN 301	Financial Resources Management	3
MHR 311	Introduction to Management	3
MKTG 321	Marketing	3
ENTR 415	New Venture Creation	3
BLAW 265	Legal Environment of Business	3
Select 6 credits from upper division Business electives:		6
Total Hours		30

Courses to total 120 credits for this degree

Music: Composition (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
MUSA 114	Studio Instruction (2 cr required in secondary performing medium) [1]	2
MUSA 115	Studio Instruction (primary performing medium)	2
MUSA 124	Studio Instruction (6 cr required in primary performing medium)	6
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 314	Studio Instruction (2 cr required in primary performing medium)	2
MUSA 387	Conducting I	2
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 225	Composition (4 credits are required)	4
MUSC 239	Aural Skills III	1
MUSC 240	Aural Skills IV	1
MUSC 241	Theory of Music III	3
MUSC 242	Theory of Music IV	3
MUSC 328	Instrumental and Choral Arranging	2
MUSC 331	Counterpoint	3
MUSC 425	Composition (8 credits are required)	8
MUSC 426	Electronic Music	2
MUSC 442	Musical Analysis	2
MUSC 490	Senior Recital	0
MUSH 111	Introduction to Music Literature	3
MUSH 322	Music in Western Civilization II	3
MUSH 323	Music in Western Civilization III	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required)	0
Select one MUSH elective at the 400 level		3
Select 8 different semesters of Major Ensembles chosen from: [2]		8
MUSA 116	Concert Choir--Vandaleers	
MUSA 316	Concert Choir--Vandaleers	
MUSA 117	University Choir	
MUSA 317	University Chorus	
MUSA 119	Marching Band	
MUSA 319	Marching Band	
MUSA 121	Concert Band	
MUSA 321	Concert Band	
MUSA 122	Orchestra	
MUSA 322	Orchestra	
MUSA 320	Wind Ensemble	
Select 2 different semesters of other ensembles chosen from:		2
MUSA 118	Jazz Choir	
MUSA 318	Jazz Choir	
MUSA 323	Jazz Ensemble	
MUSA 365	Chamber Ensemble	
In addition to the requirements above, select music electives to reach a total of 82 credits in music:		7
Total Hours		82

1 *2 credits required in secondary performing medium; if primary performing medium is other than piano, piano is suggested for the secondary area.*

2 *Keyboard majors: six semesters of major ensembles in addition to two semesters of* MUSA 315 *and/or* MUSA 365.
Guitar majors: six semesters of major ensembles and two semesters of MUSA 365.

Courses to total 120 credits for this degree

Music: Performance (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
MUSA 115	Studio Instruction	2
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 387	Conducting I	2
MUSA 491	Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	1
MUSC 240	Aural Skills IV	1
MUSC 241	Theory of Music III	3
MUSC 242	Theory of Music IV	3
MUSC 442	Musical Analysis	2
MUSH 111	Introduction to Music Literature	3
MUSH 321	Music in Western Civilization I	3
MUSH 322	Music in Western Civilization II	3
MUSH 323	Music in Western Civilization III	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required)	0
Option		
Select one of the following options:		43-56
Keyboard (p. 280)		
Instrumental (p. 280)		
Vocal (p. 280)		
Total Hours		78-91

A. Keyboard Option

Code	Title	Hours
MUSA 134	Studio Instruction (9 credits are required)	9
MUSA 315	Collaborative Piano (4 credits are required)	4
MUSA 334	Studio Instruction (12 credits required)	12
MUSA 455	Keyboard Performance Practices	1
MUSA 490	Half Recital	0
MUSH 454	Keyboard Repertoire I	2
MUSH 455	Keyboard Repertoire II	2
MUST 436	Pedagogy and Materials: Keyboard I	2
MUST 437	Pedagogy and Materials: Keyboard II	2
Jazz/Chamber Ensemble		2
MUSA 123/323	Jazz Ensemble	
MUSA 365	Chamber Ensemble	
Select one MUSH elective at the 400-level		3
Select two different semesters of Major Ensembles chosen from:		2
MUSA 116/316	Concert Choir--Vandaleers	
MUSA 117/317	University Choir	
MUSA 119/319	Marching Band	
MUSA 120/320	Wind Ensemble	
MUSA 121/321	Concert Band	
MUSA 122/322	Orchestra	
Select Music Electives to reach a total of 78 credits in Music		2
Total Hours		43

Courses to total 120 credits for this degree

B. Instrumental Option

Code	Title	Hours
MUSA 134	Studio Instruction (9 credits are required)	9
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 490	Half Recital	0
MUSA 334	Studio Instruction (12 credits are required)	12
MUSH 450	Orchestral Literature [1]	2
or MUSH 451	Repertoire	
Select one MUSH elective at the 400-level		3
Select two different semesters of Chamber Music chosen from: [2]		2
MUSA 323	Jazz Ensemble	
MUSA 365	Chamber Ensemble	
Select 8 different semesters of Major Ensemble chosen from: [3]		8
MUSA 121/321	Concert Band	
MUSA 122/322	Orchestra	
MUSA 120/320	Wind Ensemble	
Select Music Electives to reach 78 credits in Music		6
Total Hours		43

1 MUSH 450: Sax majors may take MUSH 410 in place of MUSH 450.

2 *Guitar Majors: 4 credits in four different semesters of* MUSA 365 Chamber Ensemble *are required.*

3 *Guitar Majors: 4 credits in four different semesters required for guitar majors, who may also choose from* MUSA 116/MUSA 316, MUSA 117/MUSA 317, MUSA 119/MUSA 319.

Courses to total 120 credits for this degree

C. Vocal Option

Code	Title	Hours
MUSA 134	Studio Instruction (9 credits are required)	9
MUSA 334	Studio Instruction (12 credits are required)	12
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 490	Half Recital	0
MUSH 452	Solo Vocal Repertoire	2
MUST 435	Pedagogy & Materials	2
MUSX 283	English and Italian Diction for Singers	2

MUSX 284	German and French Diction for Singers	2
Two semesters in:		2-6
MUSA 180	Opera/Musical Theatre Studio	
or MUSA 38(	Opera/Musical Theatre Studio	
Select three semesters of French or German, or two semesters of French and one of German, or two semesters of German and one of French.		12
Select one MUSH elective at the 300 or 400 Level		3
Select 8 different semesters of Major Ensembles chosen from:		8
MUSA 116	Concert Choir--Vandaleers	
MUSA 316	Concert Choir--Vandaleers	
MUSA 117	University Choir	
MUSA 317	University Chorus	
Select Music electives to reach a total of 78 credits in Music		
Total Hours		55-59

Courses to total 120 credits for this degree

Musical Theatre Minor

Code	Title	Hours
MUSA 114	Studio Instruction (4 credits are required)	4
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSA 180	Opera/Musical Theatre Studio	1-3
or MUSA 380	Opera/Musical Theatre Studio	
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSH 330	History of Music Theatre	3
THE 105	Basics of Performance I	3
THE 106	Basics of Performance II	3
THE 305	Intermediate Acting I	3
Select two courses from the following:		2
DAN 105	Dance	
DAN 216	Technique	
DAN 416	Technique	
Total Hours		27-29

Courses to total 27 credits for this minor

Vocal-Instrumental Music Education Minor

Code	Title	Hours
MUSA 114	Studio Instruction (4 credits in Studio Instruction in Voice required)	4
MUSA 119/319	Marching Band	1
MUST 253	Brass Instrument Techniques	1
MUST 254	Percussion Techniques	1
MUST 255	Woodwind Techniques	1
MUST 386	Instrumental Music in the Secondary School	3
MUST 466	Marching Band Techniques	1
MUST 385	Choral Music in the Secondary School	3
Select two different semesters of Vocal Major Ensembles chosen from:		2
MUSA 116/316	Concert Choir--Vandaleers	
MUSA 117/317	University Choir	
Select one semester of Instrumental Major Ensemble chosen from:		1
MUSA 120/320	Wind Ensemble	
MUSA 121/321	Concert Band	
MUSA 122/322	Orchestra	
Total Hours		18

Courses to total 18 credits for this minor

Program in Organizational Sciences

Richard Reardon, Coordinator (1000 W. Hubbard, Coeur d'Alene 83814-2277; 208-292-2523)

The purpose of this program is to provide leadership training for students interested in a variety of purpose-driven organizations.

Organizational settings, including for-profit businesses, political organizations (e.g., legislative bodies, political parties, PACs), not-for-profit organizations (e.g., health care companies, charities, volunteer agencies), and public and private boards (e.g., boards of education, homeowners associations, church boards), are dynamic entities that rely on skilled leaders to function efficiently and to ensure positive workplace culture and climate. The interdisciplinary program in Organizational Sciences draws from business, industrial/organizational psychology, public administration, industrial sociology, educational leadership and other disciplines to provide students with an understanding of interpersonal workplace dynamics and fundamentals of leadership.

It has become increasingly evident over the last century that many problems in the workplace are the result of relationship failures. Examples of such failures include conflict between managers and employees, conflict between employees and other employees, conflict between groups within organizations, poor communication between organizations and the communities they serve, lack of proper coordination of efforts, lack of proper understanding of worker capabilities and training needs, lack of concern for both employee and manager professional development, and the inability of both managers and employees to understand that organizational success depends on leaders and workers keeping the natural tension between them from becoming destructive.

Majors

- Organizational Sciences (B.A. or B.S.) (p. 282)

Minors

- Organizational Dynamics Undergraduate Academic Certificate (p. 282)

Organizational Dynamics Undergraduate Academic Certificate

Code	Title	Hours
ORGS 305	Nonprofit Organizations	3
ORGS 407	Advanced Nonprofit Organizations	3
ORGS/PSYC 441	Human Relations in the Workplace	3
Select 3 credits from the following:		3
ORGS 320	Budgeting for Small Organizations	
ORGS 321	Workplace Motivation	
ORGS 322	Workplace Soft Skills	
ORGS 323	Messaging for Small Organizations	
Select 3 credits from the following: [1]		3
COMM 335	Intercultural Communication	
COMM 410	Conflict Management	
COMM 456	Nonprofit Fundraising	
ORGS/PSYC 414	Traumatic Events: Preparation, Intervention, Evaluation	
ORGS 110	Governance in Small Organizations [2]	
Total Hours		15

1 *Three credits of COMM, ORGS, ORGS 400, POLS,* PSYC 400, PSYC 404, PSYC 494, PSYC 498, *or* PSYC 499 *may be substituted for one of the above courses with the approval of the Director of Organizational Sciences*

2 ORGS 110 Governance in Small Organizations*: Reserved for leaders of student & community groups at the UI or dual enrolled.*

Courses to total 15 credits for this certificate

Organizational Sciences (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general requirements for either the B.A. or B.S. degree, and:

Code	Title	Hours
ORGS 110	Governance in Small Organizations	3
or ORGS 210	Introduction to Organizational Sciences	
ORGS 320	Budgeting for Small Organizations	1
ORGS 321	Workplace Motivation	1
ORGS 322	Workplace Soft Skills	1
ORGS 410	Capstone Project in Organizational Sciences	1-6
ORGS 444	Methods and Analysis in Organizational Science	4
Select three courses from the following:		9
ANTH 100	Introduction to Anthropology	
COMM 111	Introduction to Communication Studies	
JAMM 100	Media and Society	
ORGS 155	Financial Literacy	
POLS 101	American National Government	
PSYC 101	Introduction to Psychology	
SOC 101	Introduction to Sociology	

Specialization

Select one of the following specializations:	21-24
Organizational Communication (p. 282)	
Organizations and Communities (p. 282)	
Total Hours	41-49

Organizational Communication

Code	Title	Hours
Select 6 courses from COMM and 2 from other disciplines for this specialization:		24
COMM 233	Interpersonal Communication	
COMM 335	Intercultural Communication	
COMM 347	Persuasion	
COMM 400	Seminar	
COMM 410	Conflict Management	
COMM 431	Applied Business and Professional Communication	
COMM 432	Gender and Communication	
COMM 355	Organizational Communication	
COMM 456	Nonprofit Fundraising	
ENGL 207	Persuasive Writing	
JAMM 265	Principles of Advertising	
JAMM 440	Critical Issues in Mass Media	
JAMM 444	Mass Media and Public Opinion	
ORGS 305	Nonprofit Organizations	
ORGS 400	Seminar	
ORGS 407	Advanced Nonprofit Organizations	
ORGS 415	Planning Professional Conferences and Events	
PSYC 320	Introduction to Social Psychology	
PSYC 345	Group Dynamics	
PSYC 441	Human Relations in the Workplace	
Total Hours		24

1 Student may not pursue both this specialization and a minor in Communication Studies.

Organizations and Communities

Code	Title	Hours
Select seven courses from the following:		21
COMM 335	Intercultural Communication	
COMM 347	Persuasion	
COMM 410	Conflict Management	
COMM 431	Applied Business and Professional Communication	
COMM 355	Organizational Communication	
COMM 456	Nonprofit Fundraising	
ENTR 414	Entrepreneurship	
JAMM 252	Introduction to Integrated Media Campaigns	
MHR 311	Introduction to Management	
ORGS 305	Nonprofit Organizations	
ORGS 400	Seminar	
ORGS 404	Special Topics [1]	
ORGS 407	Advanced Nonprofit Organizations	
ORGS 415	Planning Professional Conferences and Events	

ORGS 435	Personnel
ORGS 450	Training and Performance Support
POLS 451	Public Administration
PSYC 320	Introduction to Social Psychology
PSYC 345	Group Dynamics
PSYC 441	Human Relations in the Workplace
SOC 201	Introduction to Inequalities & Inclusion
A second major, an academic minor, an academic certificate, or a CLASS approved emphasis [2]	
Total Hours	21

[1] *A maximum of 3 credits of* ORGS 404 Special Topics *may be used towards the completion of this major.*

[2] *If a second major or an academic minor is used to satisfy this requirement, the area of emphasis or academic minor required for the CLASS general B.S. requirements is also considered satisfied.*

Courses to total 120 credits for this degree

Department of Politics and Philosophy

Graham Hubbs, Chair (205 Admin Bldg.; 83844-3165; phone 208-885-6328).

Philosophy

Philosophy examines the grounds of knowledge, the nature of reality, and the nature of value, justice, and morality. It asks fundamental questions about how we reason and how we ought to reason. Its subject matter encompasses all other academic disciplines, indeed all areas of human experience, e.g., society, values, mind, language, art, and science.

The main value of philosophy lies in its contribution to a liberal education. As a central discipline of the humanities, philosophy encourages those who study it to gain insight into themselves and others, which proves helpful in setting high standards and working in productive collaboration with one's associates. In addition, philosophy is an excellent means of learning to reason and write clearly which are skills useful in every conceivable human enterprise. Some philosophy majors pursue careers in academia; others, however, make rewarding careers for themselves in business, government, journalism, law, and human services.

Political Science

Political science is the study of politics and power from domestic, international, and comparative perspectives. It includes scholarship in administration, behavior, diplomacy, ideology, institutions, interest groups, law, policy, strategy, theory, and war. The undergraduate program in political science is designed to provide students with a comprehensive introduction to the discipline, viewed as a specific set of strategies for understanding political life. Though conceptual, historical, structural, institutional, and behavioral knowledge are delivered throughout the curriculum, the stress of the program is on giving students the theoretical insights and methodological skills needed to ask and answer political questions. The emphasis is less on learning the facts of politics than on being able to recognize, evaluate, and use the intellectual tools of the discipline.

Students will leave the program with an understanding of the basic modes in inquiry in political science: normative, empirical, and comparative analysis. The core curriculum is designed to give students a broad theoretical framework in political science and an introduction to research methods. Upper division courses give students the opportunity to build specialized knowledge in political science through two of five concentration areas: American politics and political behavior, international relations and comparative politics, public administration and policy, public law, and political theory.

Political science provides a foundation for career development in law, politics, public service, non-profit and non-governmental organizations, business, academics, and other fields. Students in the program are also encouraged to take advantage of a variety of internship and service learning opportunities.

Majors

- Philosophy (B.A. or B.S.) (p. 284)
- Political Science (B.A.) (p. 285)
- Political Science (B.S.) (p. 286)

Minors

- Bioethics Minor (p. 283)
- Philosophy Minor (p. 285)
- Philosophy, Politics and Economics Minor (p. 285)
- Comparative/International Politics Minor (p. 284)
- Political Science Minor (p. 286)
- Religious Studies Minor - See the Religious Studies (p. 290) section for details on this minor.

Philosophy Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Politics and Philosophy. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Philosophy (M.A.) (p. 284)

Political Science Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Politics and Philosophy. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Political Science (M.A.) (p. 286)
- Public Administration (M.P.A.) (p. 286)
- Joint J.D./M.P.A. (p. 286)
- Political Science (Ph.D.) (p. 286)

Bioethics Minor

Code	Title	Hours
Basic Science Component		
Choose two courses from the following:		6-8
AVS 109	The Science of Animals that Serve Humanity	
AVS 110	Science of Animal Husbandry	
BIOL 114	Organisms and Environments	
BIOL 115	Cells & the Evolution of Life	
BIOL 121	Human Physiology	

BIOL 310	Genetics	
ENVS 101	Introduction to Environmental Science	
FOR 235	Society and Natural Resources	
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	
NRS 125	Introduction to Conservation and Natural Resources	
NRS 235	Society and Natural Resources	
PSYC 101	Introduction to Psychology	
PSYC 218	Introduction to Research in the Behavioral Sciences	
Basic Philosopy Component		
PHIL 103	Introduction to Ethics	3
Advanced Philosophy Component		
PHIL 351	Philosophy of Science	3
or PHIL 417	Philosophy of Biology	
Choose one of the following:		3
PHIL 361	Professional Ethics	
PHIL 450	Ethics in Science	
PHIL 452	Environmental Philosophy	
Advanced Science Component		3-4
Any 400-level AVS, BIOL, ENT, ENVS, FISH, FOR, H&S, NRS, PLSC, PSYC, REM, or WLF course(s) totaling 3 or more credits		
OR		
BOTH PHIL 351 and PHIL 417. This option enables philosophy majors to earn the bioethics minor without taking a 400-level science coruse (which would require prerequisites).		
Total Hours		18-21

Courses to total 18-21 credits for this minor

Comparative/International Politics Minor

Code	Title	Hours
POLS 205	Introduction to Comparative Politics	3
POLS 237	Introduction to International Politics	3
Select 12 credits from the following Political Science courses:		12
POLS 381	European Politics	
POLS 410	Game Theory	
POLS 420	Introduction to Asian Politics	
POLS 423	Politics, Policy and Gender	
POLS 440	International Organizations & International Law	
POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
POLS 449	World Politics and War	
POLS 480	Politics of Development	
POLS 487	Political Violence and Revolution	
Total Hours		18

Courses to total 18 credits for this minor

Philosophy (B.A. or B.S.)

Note: Students who intend to do graduate work are advised to take the Bachelor of Arts degree.

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for either the B.A. or B.S. (p. 249) degree, and:

Code	Title	Hours
PHIL 103	Introduction to Ethics	3
or PHIL 208	Business Ethics	
PHIL 201	Critical Thinking	3
or PHIL 202	Introduction to Symbolic Logic	
PHIL 240	Belief and Reality	3
PHIL 320	History of Ancient and Medieval Philosophy	3
PHIL 321	History of Modern Philosophy	3
PHIL 490	Senior Seminar	3
Select one course in Philosophy and Cultures:		3
PHIL 200	Philosophy of Alcohol	
PHIL 205	Topics in Social Philosophy	
PHIL 209	Mind and Madness	
PHIL 221	Philosophy in Film	
PHIL 307	Buddhism	
Select 9 credits of Upper-Division Philosophy electives including at least one course in non-Western thought		9
Select 20 credits in related fields [1]		20
Total Hours		50

Courses to total 120 credits for this degree

[1] *Related Fields include Humanities, Social Sciences and Sciences. The electives in Philosophy and Related Fields are to be selected with the approval of the Chair of Philosophy.*

Philosophy (M.A.)

The M.A. program in Philosophy is a cooperative one, offered jointly by the University of Idaho and Washington State University, so that University of Idaho students may have the benefit of additional faculty and classes available at Washington State.

Master of Arts. Major in Philosophy.

All students earning the M.A. degree in Philosophy will be required to complete 30 credit hours, including twelve hours of core courses, twelve hours of elective courses, and six hours of Master's Thesis research. Up to six hours of course work may be completed at the 400-level. Students may pursue a traditional Philosophy M.A. or choose one of two options for emphasis: Environmental Philosophy or Ethics.

Environmental Philosophy. For students choosing the Environmental Philosophy option, administered by the Department of Philosophy at the University of Idaho: the thesis must be in Environmental Philosophy and at least 15 of the letter-graded credit hours must be in environmental courses, some of which may be offered through other departments. Relevant courses approved by the student's thesis advisor.

Ethics. For students choosing the Ethics option, administered by the Department of Philosophy at Washington State University: the thesis must be in Ethics and at least 15 of the letter-graded credit hours must

be in ethics or other normative theory courses approved by the student's thesis advisor.

Philosophy Minor

Code	Title	Hours
PHIL 320	History of Ancient and Medieval Philosophy	3
PHIL 321	History of Modern Philosophy	3
Select one of the following:		3
PHIL 103	Introduction to Ethics	
or PHIL 208	Business Ethics	
PHIL 201	Critical Thinking	
PHIL 202	Introduction to Symbolic Logic	
PHIL 240	Belief and Reality	
Select three Upper-Division Philosophy courses		9
Total Hours		18

Courses to total 18 credits for this minor

Philosophy, Politics and Economics Minor

Code	Title	Hours
PHIL 103	Introduction to Ethics	3
or PHIL 208	Business Ethics	
POLS 101	American National Government	3
or POLS 205	Introduction to Comparative Politics	
or POLS 237	Introduction to International Politics	
PHIL/POLS 352	Philosophy, Politics, and Economics	3
Select one of the following:		6-4
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Upper-division PHIL course		3
Upper-division POLS course		3
Upper division ECON course		3

Political Science (B.A.)

The B.A. degree emphasizes a traditional liberal arts education including a 16-credit foreign language requirement. Political Science majors must have a minimum of 36 credits in Political Science courses with at least 18 of those credits coming in upper-division courses. The course work also includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree (p. 249), and:

Code	Title	Hours
Political Science Core Requirements		
POLS 101	American National Government	3
POLS 235	Political Research Methods and Approaches	3
Select three of the five introductory courses:		9
POLS 205	Introduction to Comparative Politics	
POLS 207	Introduction to Political Behavior	
POLS 208	Introduction to Political Philosophy	
POLS 209	Introduction to Public Policy	
POLS 237	Introduction to International Politics	
Senior Seminar		
POLS 490	Senior Experience (Senior standing or 24 credit hours in political science.)	3
Additional Political Science Upper Division Requirements		
Select 18 credits from the following areas: [1]		18
American Political Institutions & Behavior		
PHIL 469	The Judicial Process	
POLS 331	American Political Parties and Elections	
POLS 332	American Congress	
POLS 333	American Political Culture	
POLS 437	American Presidency	
POLS 471	Intergovernmental Relations	
POLS 474	Public Opinion and Political Behavior	
Public Administration and Public Policy		
POLS 338	American Foreign Policy	
POLS 364	Politics of the Environment	
POLS 439	Public Policy	
POLS 451	Public Administration	
POLS 462	Natural Resource Policy	
International and Comparative Politics		
POLS 381	European Politics	
POLS 410	Game Theory	
POLS 420	Introduction to Asian Politics	
POLS 423	Politics, Policy and Gender	
POLS 440	International Organizations & International Law	
POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
POLS 449	World Politics and War	
POLS 480	Politics of Development	
POLS 487	Political Violence and Revolution	
Public Law		
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
Political Philosophy		
POLS 425	History of Political Philosophy I	
POLS 426	History of Political Philosophy II	
POLS 428	American Political Thought	
POLS 429	Contemporary Political Ethics	
Upper-Division Related Fields		
Select 20 credits from related fields [2]		20
Total Hours		56

Courses to total 120 credits for this degree

[1] Students may focus their interests in political science by choosing among courses in the following core areas. The allocation of those courses is subject to the approval of the faculty advisor. A maximum of 6 credits of political science internship and/or directed study courses may be counted toward meeting these political science credit requirements.

[2] Courses chosen depending on student interest in consultation with your advisor.
Thesis and internship credits cannot be used to satisfy this requirement.

Political Science (B.S.)

The B.S. degree requires increased course work in behavioral research methods. Political Science majors must have a minimum of 39 credits in Political Science courses with at least 21 of those credits coming in upper-division courses. Course work also includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.S. degree, and:

Code	Title	Hours
Political Science Core Requirements		
POLS 101	American National Government	3
POLS 235	Political Research Methods and Approaches	3
POLS 336	Political Research Methods and Approaches II	3
POLS 490	Senior Experience (Senior standing or 24 credit hours in political science are required.)	3
Select three of the five introductory courses:		9
POLS 205	Introduction to Comparative Politics	
POLS 207	Introduction to Political Behavior	
POLS 208	Introduction to Political Philosophy	
POLS 209	Introduction to Public Policy	
POLS 237	Introduction to International Politics	
Additional Political Science Upper Division Requirements		
Select 18 credits from the following areas: [1]		18
American Political Institutions and Behavior		
PHIL 469	The Judicial Process	
POLS 331	American Political Parties and Elections	
POLS 332	American Congress	
POLS 333	American Political Culture	
POLS 437	American Presidency	
POLS 471	Intergovernmental Relations	
POLS 474	Public Opinion and Political Behavior	
Public Administration and Public Policy		
POLS 338	American Foreign Policy	
POLS 364	Politics of the Environment	
POLS 439	Public Policy	
POLS 451	Public Administration	
POLS 462	Natural Resource Policy	
International and Comparative Politics		
POLS 381	European Politics	
POLS 410	Game Theory	
POLS 420	Introduction to Asian Politics	
POLS 423	Politics, Policy and Gender	
POLS 440	International Organizations & International Law	
POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
POLS 449	World Politics and War	
POLS 480	Politics of Development	
POLS 487	Political Violence and Revolution	
Public Law		
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
Political Philosophy		
POLS 425	History of Political Philosophy I	
POLS 426	History of Political Philosophy II	
POLS 428	American Political Thought	
POLS 429	Contemporary Political Ethics	
Courses in upper-division related fields		
Select 17 credits depending on student interest and in consultation with advisor [1]		17
Additional research methods course		
Select one additional research methods course in consultation with advisor [2]		3
Total Hours		59

Courses to total 120 credits for this degree

[1] *Thesis and internship credits cannot be used to satisfy this requirement.*

[2] *One additional research methods, math, or science course chosen in consultation with your advisor.*

Political Science (M.A.)

Master of Arts. Major in Political Science.

General College of Graduate Studies M.A. requirements for application must be followed. Applicants must also submit three letters of recommendation and a 300-500 word statement of purpose directly to the Department of Political Science.

Political Science (Ph.D.)

Doctor of Philosophy. Major in Political Science.

General College of Graduate Studies requirements for application must be followed. Applicants to the Ph.D. program must also submit Graduate Record Examination scores, three letters of recommendation, and a 300-500 word statement of purpose directly to the Department of Political Science.

Political Science Minor

Code	Title	Hours
POLS 101	American National Government	3
Select 15 credits of any upper or lower division Political Science courses		15
Total Hours		18

Courses to total 18 credits for this minor

Public Administration (M.P.A.)

Master of Public Administration. Major in Public Administration.

The Department of Politics and Philosophy at the University of Idaho offers the Master of Public Administration (MPA) degree for students interested in careers in the governance and management of local

governments and communities. Students can expect to leave the program with intellectual and analytical skills, and the practical experience needed to enhance their ability to serve local governments and communities. The program is public service oriented, and is delivered in partnership with communities in Idaho and Washington.

Practitioner involvement in this program provides students with a more relevant and practical education than that found in more traditional programs. Academic faculty members work closely with local government professionals to deliver courses and professional development opportunities.

The program requires 36 hours of coursework, which includes an 18-hour core:

Code	Title	Hours
POLS 555	Public Administration Theory	3
POLS 557	Governmental Budgeting	3
POLS 565	Local Government Law	3
POLS 572	Local Government Politics and Administration	3
POLS 575	Public Personnel Administration	3
POLS 558	Research Methods for Local Government and Community Administration	3
Total Hours		18

Students develop their specific interests in local government by choosing 12 to 15 hours of elective courses in consultation with and approval of their advisor. These courses may be chosen in alignment with the bioregional planning and community design graduate program or other UI graduate programs. Students must also complete a final comprehensive examination.

Students with little or no public administration experience are required to complete a 3 to 6-hour internship to gain hands-on experience in the governance of local governments and communities. In-service students must complete 3 hours of PolS 559 Field Based Research in lieu of the internship.

The MPA program is available in both the traditional on-campus and on-line formats. Though no specific undergraduate preparation is required for the MPA, applicants must have a 3.0 undergraduate GPA, and three letters of recommendation.

The MPA is also offered with the University of Idaho College of Law through a joint JD/MPA program. JD/MPA applicants must meet all the requirements for admission to the College of Law; applicants must apply to both the College of Law and the College of Graduate Studies for admission into the JD/MPA program.

Concurrent Degree in Law and Public Administration

The University of Idaho's joint JD/MPA degree program provides students with the opportunity to earn both degrees in three to four years. Students must apply separately to and be admitted by the College of Graduate Studies/Master of Public Administration Program, the College of Law, and the Concurrent JD/MPA Degree Program.

The Master of Public Administration is a professional degree for those who seek leadership positions in government and public service. It is ideal for law students who intend to practice for local governments as city attorneys, prosecutors, public defenders, and who intend to assume leadership roles in local, state, and federal agencies and governments. Students in the MPA program learn the mechanics of government, but the program is fundamentally designed to prepare professionals who hope to run governments. The program is public service oriented, and is delivered in partnership with communities in Idaho and Washington.

The MPA is offered in both traditional and on-line formats. The MPA program requires 36 hours of coursework and is built around an 18-hour core curriculum (see above). The program also requires an internship (3 to 6 hours) and 12 to 15 hours of elective credits.

By double counting two courses (6 hours) in the program toward the JD, and after fulfilling the elective requirements for the MPA, students may complete the JD/MPA degrees with an additional 9 to 12 hours of coursework beyond the JD curriculum. Students must also complete a final MPA comprehensive examination.

The courses to be double-counted must be taken after matriculation into the JD program of study. Under law school accreditation standards, there are limits to the total number of distance education credits that can be counted toward the JD; any MPA classes taken by distance education that are credited toward completion of the JD will count against that limit (see ABA Standards and Rules of Procedure Standards 306(e) and 311(d)).

Department of Psychology and Communication Studies

Ben Barton, Chair (206 Student Health Ctr. 83844-3043; phone 208-885-6324; www.uidaho.edu/class/psychcomm)

Psychology is the scientific study of thinking, emotion, and behavior. It is a diverse field, and can be applied to almost all aspects of everyday life: interpersonal relationships, school and lifelong learning, family, and the work environment. Psychology uses scientific research methods to develop and test theories, and to explain or predict behavior. Undergraduate study in psychology provides a broad coverage of the field; whereas graduate study focuses more narrowly on a particular discipline, preparing students for professional work as researchers and/or practitioners.

Communication Studies is a social science discipline that considers how people verbally and nonverbally communicate at the individual, societal, and cultural levels. It can be seen as the discipline that links other disciplines, a discipline that is vital if people, organizations, and governments are to cope with today's complex world. Students with degrees in Communication Studies pursue careers as communication specialists in the fields of communication education, business, government and politics, high technology industries, health, and social and human services. Graduates may also pursue advanced degrees in communication and other fields.

The Department of Psychology and Communication Studies offers a B.S. or B.A. in Psychology and a minor in Communication Studies. The psychology degree requires students to take a wide variety of courses in areas such as developmental processes, social psychology, learning and memory, personality, clinical psychology, biological processes, and sensation/perception. Depending on their interests, students also select from more specialized subjects such as human factors, industrial/organizational psychology, aging, and the psychology of emotion. The Communication Studies minor requires students to take courses in the fields of speech, interpersonal and organizational communication. Students choose additional coursework from the areas of conflict

management, intercultural communication, persuasion, gender, and aging.

Currently, graduate training in the department is available only in Psychology. The department offers an M.S. in psychology with an emphasis in human factors psychology. The master's degree in psychology prepares students for careers in government and industry, teaching at the junior college level, or for continued study at the doctoral level. The Ph.D. in experimental psychology prepares students for a research career that may involve applied research in industry or an academic position. An applicant to the graduate program must possess an undergraduate degree in psychology or a related field, such as engineering, computer science, or business. In addition, applicants should have completed a course in introductory statistics, a course in experimental psychology or research methods, and a course in computer programming. Additional coursework in cognitive psychology and sensation/perception is recommended. All applicants will be considered even if recommended coursework has not been taken.

Majors

- Communication (B.A. or B.S.) (p. 288)
- Psychology (B.A. or B.S.) (p. 289)

Minors

- Addictions Minor (p. 288)
- Communication Minor (p. 289)
- Psychology Minor (p. 290)

Psychology and Communication Studies Graduate Program

- Organizational Dynamics Graduate Academic Certificate (p. 289)
- Psychology (M.S.) (p. 290)
- Experimental Psychology (Ph.D.) (p. 289)

Addictions Minor

A grade of C or above is required for each class.

Code	Title	Hours
PSYC 470	Introduction to Chemical Addictions	3
PSYC 472	Introduction to the Pharmacology of Psychoactive Drugs	3
PSYC 477	Chemical Dependency and the Family	3
Emphasis		
Select one of the following emphasis areas:		21
Treatment Emphasis		
PSYC 473	Blood and Airborne Pathogens: HIV/STDs/ Hepatitis/TB	
PSYC 474	Record Keeping and Case Management in Chemical Addictions Counseling	
PSYC 475	Professional Ethics in Addictions Counseling	
PSYC 476	Relapse Prevention in Chemical Addictions Counseling	
PSYC 478	Individual Therapy Techniques in Chemical Addictions Counseling	
PSYC 479	Group Therapy Techniques in Chemical Addictions Counseling	
PSYC 482	Addictions Screening and Assessment	
Prevention Emphasis		
PSYC 305	Developmental Psychology	
Advisor Approved PSYC courses to total 30 credits		
Total Hours		30

Courses to total 30 credits for this minor

Communication (B.A. or B.S.)

A minimum gpa of 2.50 is required to graduate with a degree in Communication.

Required coursework includes the university requirements (see regulation J-3), the general requirements for either the B.A. or B.S. degree, and:

Code	Title	Hours
COMM 111	Introduction to Communication Studies	3
COMM 233	Interpersonal Communication	3
COMM 335	Intercultural Communication	3
COMM 355	Organizational Communication	3
COMM 410	Conflict Management	3
COMM 453	Communication Theory	3
COMM 455	Communication Research Methods	3
Select one of the following:		2-3
COMM 101	Fundamentals of Oral Communication	
COMM 150	Online Oral Communication	
Select one of the following:		3
PSYC 215	Quantitative Methods in Psychology	
STAT 251	Statistical Methods	
At least 18 additional upper-division Communication credits.		*18*
Up to 6 of these credits may be earned by taking:		
ENGL 313	Business Writing	
ENGL 317	Technical Writing	
ORGS 415	Planning Professional Conferences and Events	
ORGS 441	Human Relations in the Workplace	
PSYC 310	Psychology of Personality	
PSYC 320	Introduction to Social Psychology	
PSYC 416	Industrial/Organizational Psychology	
Only 3 of these credits may come from:		
COMM 400	Seminar	
COMM 403	Workshop	
COMM 494	Research Experience	
COMM 497	Practicum in Instruction	
COMM 498	Internship	
COMM 499	Directed Study	
Total Hours		44-45

Courses to total 120 credits for this degree

Communication Minor

Code	Title	Hours
COMM 111	Introduction to Communication Studies	3
COMM 233	Interpersonal Communication	3
COMM 335	Intercultural Communication	3
COMM 355	Organizational Communication	3
COMM 410	Conflict Management	3
Select at least one course from the following:		3
COMM 332	Communication and the Small Group	
COMM 340	Family Communication	
COMM 347	Persuasion	
COMM 404	Special Topics	
COMM 431	Applied Business and Professional Communication	
COMM 432	Gender and Communication	
COMM 456	Nonprofit Fundraising	
COMM 491	Communication and Aging	
COMM 492	Dark Side of Communication	
Total Hours		18

Courses to total 18 credits for this minor

Experimental Psychology (Ph.D.)

Doctor of Philosophy. Major in Experimental Psychology.
General Ph.D. requirements apply.

Code	Title	Hours
Required Courses		
PSYC 444	Sensation and Perception	3
PSYC 446	Engineering Psychology	3
PSYC 500	Master's Research and Thesis	1
PSYC 504	Special Topics	1
PSYC 509	Human Factors in Engineering Design	3
PSYC 512	Research Methods	3
PSYC 513	Advanced Research Methods	3
PSYC 525	Cognitive Psychology	3
PSYC 526	Cognitive Neuroscience	3
PSYC 552	Ergonomics and Biomechanics	3
PSYC 561	Human-Computer Interaction	3
PSYC 562	Advanced Human Factors	3
PSYC 599	Research	1
PSYC 600	Doctoral Research and Dissertation	1
STAT 431	Statistical Analysis	3
Select 3-4 credits in electives:		3-4
Total Hours		40-41

Courses to total 78 credits for this degree

Organizational Dynamics Graduate Academic Certificate

Code	Title	Hours
AOLL 510	Foundations of Human Resource Development	3
MHR 413	Organizational Behavior	3
POLS 451	Public Administration	3
PSYC 541	Human Relations in the Workplace	3
Total Hours		12

Courses to total 12 credits for this certificate

Psychology (B.A. or B.S.)

PSYC 101 and PSYC 218 must be completed with a grade of C or better and a minimum cumulative GPA of 2.50 must be attained for students seeking upper-division standing in the department. In order to graduate with a degree in psychology, a 2.50 GPA must be attained.

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general requirements for either the B.A. or B.S. degree, and:

Code	Title	Hours
PSYC 101	Introduction to Psychology [1]	3
PSYC 201	Survey of Contemporary Psychology	1
PSYC 215	Quantitative Methods in Psychology	3
or STAT 251	Statistical Methods	
PSYC 218	Introduction to Research in the Behavioral Sciences [1]	4
A grade of C or above in at least three courses from each of the following groups:		18
Personal/Social Bases of Behavior:		
PSYC 305	Developmental Psychology	
PSYC 310	Psychology of Personality	
PSYC 311	Abnormal Psychology	
PSYC 320	Introduction to Social Psychology	
PSYC 430	Tests and Measurements	
Biological/Experimental Bases of Behavior:		
PSYC 325	Cognitive Psychology	
PSYC 372	Physiological Psychology	
PSYC 390	Psychology of Learning	
PSYC 425	Psychology of Action	
PSYC 444	Sensation and Perception	
PSYC 456	Psychology of Emotion	
Select at Least 12 Additional Upper-Division Psychology Credits [1]		12
Up to 6 of these credits may be earned by taking:		
COMM 347	Persuasion	
COMM 355	Organizational Communication	
COMM 410	Conflict Management	
COMM 432	Gender and Communication	
Only 3 of these credits may come from:		
PSYC 400	Seminar	
PSYC 494	Psychology Research Training	
PSYC 497	Practicum in Instruction	

PSYC 498	Internship	
PSYC 499	Directed Study	
Total Hours		41

Courses to total 120 credits for this degree

Psychology (M.S.)

Master of Science. Major in Psychology.

In addition to the admission requirements of the Graduate College, the department requires Graduate Record Examination scores, letters of recommendation, and a brief essay regarding plans for graduate study and professional career. The undergraduate degree need not be in psychology, although at least a minor in psychology is desirable. In the event the student has a minimal background in psychology, this deficiency may be remedied by enrolling in certain undergraduate courses that would not necessarily be included in the graduate study plan.

The study program for each student is prepared with his or her future plans as a point of departure. Some students seek the master's degree as a terminal degree and assume positions in community mental health organizations, school systems, or industry, while others continue in doctoral studies.

Research opportunities in the department are many. Students are encouraged to begin research early in their graduate study under the direction of a major professor of mutual choice.

Students admitted to this program must fulfill the requirements of the College of Graduate Studies and of the Department of Psychology and Communication Studies. See the College of Graduate Studies (p. 232) section for the general requirements applicable to all M.S. degrees.

Psychology Minor

Note: All courses required for the psychology minor must be completed with a grade of 'C' or better.

Code	Title	Hours
PSYC 101	Introduction to Psychology	3
Select at least one of the following:		3-4
ORGS 444	Methods and Analysis in Organizational Science	
PEP 455	Design & Analysis of Research in Movement Sciences	
PSYC 218	Introduction to Research in the Behavioral Sciences	
SOC 309	Social Science Research Methods	
SOC/ANTH 417	Social Data Analysis	
Select at least two courses from each of the following groups:		12
Personal/Social Bases of Behavior:		
PSYC 305	Developmental Psychology	
PSYC 310	Psychology of Personality	
PSYC 311	Abnormal Psychology	
PSYC 320	Introduction to Social Psychology	
PSYC 430	Tests and Measurements	
Biological/Experimental Bases of Behavior:		
PSYC 325	Cognitive Psychology	
PSYC 372	Physiological Psychology	
PSYC 390	Psychology of Learning	
PSYC 425	Psychology of Action	
PSYC 444	Sensation and Perception	
PSYC 456	Psychology of Emotion	
Select at least one additional upper-division Psychology course: [1]		3
Total Hours		21-22

Courses to total 21 credits for this minor

[1] Not including PSYC 400, PSYC 403, PSYC 497, or PSYC 499.

Religious Studies

Brian Wolf, Chair, Sociology and Anthropology, (101 Archie Phinney Hall 83844-1110; phone 208-885-6751).

The academic study of religion has deep roots in Western intellectual history. One cannot adequately grasp the full dynamics of world culture without attending to the role of religion. In the last hundred years scholars in the West have paid increasing attention to non-Western religions and to the category of "religion" itself as a dimension of human experience.

Religious studies courses do not encourage or discourage religious belief; rather, they engage in the academic study of religion as a crucial element of human culture. Religious studies employs a variety of methods including anthropological, sociological, historical, philosophical, phenomenological, literary, and linguistic approaches. The principal goal of religious studies is submitting sacred texts and traditions to descriptive, analytical, critical, and empathetic scrutiny.

In terms of employment potential, a religious studies minor primarily serves a student in the same way that history or philosophy might. It increases a student's understanding of persons and cultures. Key liberal arts skills in close reading, analysis, research, and oral and written communication are central to religious studies. Some students will use religious studies to enhance their chances of acceptance in graduate programs in areas such as anthropology, sociology, social work, international relations, history, or various area studies. Others may use the minor as a broadly based stepping stone for professional training in theological seminaries or rabbinical schools.

Minors

- Religious Studies Minor (p. 290)

Religious Studies Minor

Code	Title	Hours
Religious Traditions		
Select 9 credits from the following Religious Traditions areas with at least 3 cr in Asian, Pacific, and Indigenous Religious Traditions and at least 3 cr in Western Religious Traditions:		9
Asian, Pacific, and Indigenous Religious Traditions:		
ANTH 329	North American Indians	
ANTH 422	Plateau Indians	
HIST 180	Introduction to East Asian History	
HIST 485	Chinese Social and Cultural History	
PHIL 307	Buddhism	
RELS 204	Special Topics (Related to this category)	

	or RELS 404 Special Topics	
Western Religious Traditions:		
HIST/RELS 341	Ancient Greece	
HIST/RELS 344	The Roman Empire	
HIST 442	The Medieval Church: Europe in the Early and High Middle Ages	
HIST 443	The Medieval State: Europe in the High and Late Middle Ages	
HIST 447	The Renaissance	
HIST 448	The Reformation	
HIST 449	Tudor-Stuart Britian 1485-1660	
PHIL 302	Biblical Judaism: Texts and Thought	
PHIL 303	Early Christianity: Texts and Thought	
RELS 204	Special Topics (Related to this category)	
	or RELS 404 Special Topics	
Approaches to Religious Studies and Religion and Culture		
Select 9 credits with at least 3 credits in Religion and Culture:		9
Approaches to Religious Studies:		
ANTH 327	Belief Systems	
RELS 204	Special Topics (Related to this category)	
	or RELS 404 Special Topics	
SOC 311	Development of Social Theory	
Religion and Culture:		
ART 100	World Art and Culture	
FLEN 210	Introduction to Classic Mythology	
HIST 101 & HIST 102	World History I and World History II	
HIST 270	Introduction to Greek and Roman Civilization	
HIST 457	History of the Middle East	
PHIL 240	Belief and Reality	
PHIL 320	History of Ancient and Medieval Philosophy	
PHIL 321	History of Modern Philosophy	
RELS 133	Religion and Family	
RELS 204	Special Topics (Related to this category)	
	or RELS 404 Special Topics	
Total Hours		18

Courses to total 18 credits for this minor

Foreign languages appropriate to the minor are strongly recommended. For example, Chinese, Japanese, or Nez Perce are recommended for concentration in Asian, Pacific, and Indigenous traditions; Arabic, or Latin for those focusing on Western traditions.

Department of Sociology and Anthropology

Brian Wolf, Chair (101 Archie Phinney Hall 83844-1110; phone 208-885-6751).

The department provides students with two interrelated disciplines in which they can pursue a B.A. or B.S. degree: Anthropology and Sociology. Within sociology, students can select an emphasis in Criminology or General Sociology. Students can also pursue a minor in either of these fields, or a minor in Justice Studies. In addition, we offer an academic certificate in Diversity & Stratification, and an Archaeological Technician Certificate. Our department is an ideal academic home for students interested in developing their understanding of people and society, small and large-scale cultures, culture history, cultural and social diversity, intercultural and global relations, and issues of justice, crime, and society. These programs give students the tools and perspectives necessary to understanding themselves and others in social and cultural contexts. The educational experience in sociology or anthropology -- including ample opportunity for interactions with faculty -- provides a foundation from which students can better appreciate the challenges they face in their professional and personal lives.

Sociology is the scientific study of human behavior, with an emphasis on understanding social interaction, groups, and organizations. It is an ideal major for students who are curious about themselves and the world they live in; the goal of sociology is to help students develop a "sociological imagination," the ability to understand how individual experiences, behaviors, and opportunities are influenced by the historical moment and social forces beyond the immediate control of any one person. In the criminology emphasis, students study the causes, consequences, and social responses to crime. The sociology program's strengths include, U.S. and global diversity, globalization, social inequalities, criminology, deviance, policing, and applied research. The program provides students opportunities to gain practical work experience through internships and service learning. Students leave prepared for careers in social services, human resources, criminal justice, non-profit positions, community organizing, and applied research and provides a foundation for graduate education in sociology, criminology, social work, and law.

Anthropology is the comprehensive study of the human condition, from humanity's evolutionary past to its biological diversity, from the prehistoric and historic past to modern cultural and linguistic diversity, from rural societies to urban societies. While the program at the University of Idaho considers the breadth of these topics and issues, its primary focus is on Indigenous peoples and international development, contemporary U.S. culture, historical archaeology, archaeological conservation and stabilization, and the archaeology and ethnography of the Indian Tribes of the North American Plateau. Graduates of the program are able to apply the anthropological skills and knowledge with an eye toward making a difference. Graduates go on to experience successful careers or pursue advanced programs of graduate study.

The department offers the academic certificate in Diversity & Stratification (p. 294). The purpose of the certificate in Diversity & Stratification is to provide students with specific training in intercultural skills. It requires 12 credits of diversity study and applied experience. The certificate recognizes competency in understanding a broad range of diversity issues (race, physical ability, gender, sexual orientation, age, religion, social class, etc.) and their relevance in social life and the workplace. The certificate provides students with a focused and work-related credential so they may be more competitive and effective in the job market.

The Archaeological Technician Program is designed to offer students a solid understanding of the practical and theoretical knowledge necessary to be qualified for an entry level position in government or cultural resource management (CRM). Participants must complete the entire training program with emphases in field survey, excavation, and laboratory methods. All three areas of the Certificate program include practical experience in the field and lab with academic and/

or professional evaluations that include appropriate readings and examinations.

Graduate study in anthropology is offered in areas such as American Indian studies, prehistoric and historical archaeology, sociocultural anthropology, and physical anthropology. The program offers both a thesis and a non-thesis MA. Both programs include class work, seminars, directed studies, independent research, and a thesis (with public defense) or final project. The curriculum provides sound training in general anthropology, archaeology, physical anthropology, and ethnology. Departmental research specialties include historical archaeology, prehistoric Plateau archaeology, Plateau Indian ethnography, contemporary American culture, human evolution, and indigenous peoples of South America. Anthropologists in the department also regularly collaborate with the university's history department in support of a joint Ph.D. degree in history with an emphasis on historical archaeology. Graduates of the MA program have successfully gone on to pursue additional graduate work and professional careers in anthropology. Interested students should contact the department for the application procedures.

Questions concerning the department and its programs should be addressed to the department chair (208-885-6751).

Majors

- Anthropology (B.A. or B.S.) (p. 292)
- Sociology (B.A. or B.S.) (p. 295)

Minors

- Africana Studies Minor (p. 292)
- Anthropology Minor (p. 294)
- Justice Studies Minor (p. 295)
- Sociology Minor (p. 297)

Certificates

- Archaeological Technician Undergraduate Academic Certificate (p. 294)
- Diversity and Inclusion Undergraduate Academic Certificate (p. 294)

Sociology and Anthropology Graduate Program

- Anthropology (M.A.) (p. 293)

Africana Studies Minor

Code	Title	Hours
AFST 101	Introduction to Africana Studies	3
Select one of the following courses on Contemporary Race Relations:		3
ANTH 427	Racial and Ethnic Relations	
SOC 427	Racial and Ethnic Relations	
SOC 439	Inequalities in the Justice System	
Select one of the following courses on Africana History or Present Experiences:		3
ANTH 462	Human Issues in International Development	
HIST 315	Comparative African-American Cultures	
HIST 441	Slavery and Freedom in the Americas	
IS 326	Africa Today	
Select one of the following courses on Africana Music and Literature:		3
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 383	Studies in African American Literature	
MUSA 365	Chamber Ensemble	
MUSH 201	History of Rock and Roll	
MUSH 410	Studies in Jazz History	
Select 6-8 credits of electives from the following:		6-8
AMST 301	Studies in American Culture	
ANTH 102	Cultural Anthropology	
ANTH 261	Language and Culture	
ANTH 412	Human Races	
ANTH 462	Human Issues in International Development	
COMM 335	Intercultural Communication	
EDCI 302	Teaching Culturally Diverse Learners	
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 383	Studies in African American Literature	
ENGL 385	Studies in Global Anglophone Literatures	
FLEN 315	French/Francophone Cinema in Translation	
FLEN 391	Hispanic Film	
HIST 315	Comparative African-American Cultures	
HIST 441	Slavery and Freedom in the Americas	
IS 325	The Contemporary Muslim World	
IS 326	Africa Today	
IS 370	African Community, Culture, and Music	
IS/POLS 384	African Politics	
LAS 462	Human Issues in International Development	
MUSA 365	Chamber Ensemble	
MUSH 201	History of Rock and Roll	
MUSH 410	Studies in Jazz History	
MUSH 420	Studies in World Music	
POLS 480	Politics of Development	
SOC 334	Police and Social Control	
SOC 340	Social Change & Globalization	
SOC 427	Racial and Ethnic Relations	
SOC 465	Environment, Policy, and Justice	
Total Hours		18-20

Courses to total 18 credits for this minor

Anthropology (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for either the B.A. or B.S. degree, and:

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
ANTH 101	Biological Anthropology	3
ANTH 102	Cultural Anthropology	3
ANTH 103	Introduction to Archaeology	3
ANTH 230	World Prehistory	3
ANTH 261	Language and Culture	3

ANTH 416	Qualitative Social Science Methods	3
ANTH 417	Social Data Analysis	3
or STAT 251	Statistical Methods	
ANTH 420	Anthropological History and Theory	3
ANTH 428	Social and Political Organization	3
SOC 101	Introduction to Sociology	3
Select 18 credits of Upper-Division Anthropology electives		18
Select 9 credits of courses in related fields		9
*No more than 6 credits of AIST 321 may be applied to this major.		
Total Hours		60

Courses to total 120 credits for this degree

Anthropology (M.A.)

Master of Arts. Major in Anthropology.

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Sociology & Anthropology. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each M.A. degree.

Thesis Option.

Course work will include either 30 credits plus a foreign language proficiency examination or 36 credits and no foreign language requirement. Students who as undergraduates did not take at least one course in each of the four subfields of anthropology and a course in statistics will be asked to do so (in consultation with an advisor) at the beginning of their graduate programs. No graduate credit will be awarded for courses taken to satisfy such deficiencies. Graduate students must demonstrate competence in each of the four subfields of anthropology. The thesis option M.A. core along with the expected undergraduate preparation (or courses taken as deficiencies as a graduate student) are designed for this purpose. Thesis students complete the core courses, supporting fields electives, the anthropology electives, and the thesis credits.

Code	Title	Hours
ANTH 420	Anthropological History and Theory	3
ANTH 500	Master's Research and Thesis	6-10
ANTH 511	Human Evolution	3
ANTH 521	Contemporary Issues in Anthropological Theory	3
ANTH 530	Introduction to Archaeological Method and Theory	3
ANTH 516	Qualitative Social Science Methods	3
or ANTH 517	Social Data Analysis	
Select up to 6 credits of electives in supporting fields		0-6
Total Hours		21-31

Both the 30- and 36-credit M.A. program must include at least 6 but no more than 10 thesis credits, although more than 10 credits of ANTH 500 may be taken. A minimum of 18 credits must be at the 500 level. Anthropology courses must be at the 400 or 500 level (cross-listed 400-leve/500-level courses must be taken at the 500-level), while supporting courses can include 300 level. No more than 12 credits can be transferred from other institutions and an official copy of the student's transcripts from each institution must be on file in the Registrar's Office. Such institutions must have a graduate program and the work taken for graduate credit.

Note: Students who have already received credit for any core course or an equivalent will not need to retak it, but will substitute appropriate courses with approval from their advisor.

Non-thesis option.

Course work will include either 30 credits plus a foreign language (or language other than the student's native language) proficiency examination or 36 credits and no foreign language requirement. Students who as undergraduates did not take at least one course in cultural anthropology, archaeology, and physical anthropology and a course in statistics will be required to do so in consultation with an advisor at the beginning of their graduate programs. In general, no graduate credit will be awarded for courses taken to satisfy such deficiencies. Non-thesis students complete the core courses, a field school or internship, supporting fields electives, anthropology electives, non-thesis credits, and select one subfield emphasis.

Code	Title	Hours
ANTH 420	Anthropological History and Theory	3
ANTH 521	Contemporary Issues in Anthropological Theory	3
ANTH 599	Non-thesis Master's Research	1-5
Select up to 6 credits of electives in supporting fields		0-6
ANTH 516	Qualitative Social Science Methods	3
or ANTH 517	Social Data Analysis	
Select up to 6 credits in Field School or Internship:		0-6
ANTH 509	Anthropological Field Methods	
ANTH 598	Internship	
Non-Thesis Subfield		
Select one non-thesis Subfield:		6
Physical Anthropology		
ANTH 511	Human Evolution	
ANTH 512	Human Races	
Archaeology		
ANTH 530	Introduction to Archaeological Method and Theory	
Select one of the following:		3
ANTH 453	Archaeological Lab Techniques	
ANTH 532	Historical Artifact Analysis	
ANTH 549	Lithic Technology	
Cultural Anthropology		
ANTH 528	Social and Political Organization	
ANTH 562	Human Issues in International Development	
Total Hours		19-35

A minimum of 18 credits must be at the 500 level. Anthropology courses must be at 400 or 500 levels (cross-listed 400-level/500-level courses must be taken at the 500-level), while supporting courses can include 300 level. No more than 12 credits can be transferred from other institutions and an official copy of the student's transcripts from each institution must be on file in the Registrar's Office. Such institutions must have a graduate program and the work taken for graduate credit.

Note: Students who have already received credit for any core course or an equivalent, except for the field school or internship, will not need to retake it, but will substitute appropriate courses with approval from their advisor.

Anthropology Minor

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
Select two courses from the following:		6
ANTH 101	Biological Anthropology	
ANTH 102	Cultural Anthropology	
ANTH 103	Introduction to Archaeology	
ANTH 230	World Prehistory	
Select three upper-division Anthro electives, including at least one 400-level course		9
Select one additional lower or upper-division Anthropology elective		3
Total Hours		21

Courses to total 21 credits for this minor

Archaeological Technician Undergraduate Academic Certificate

Note: A minimum overall GPA of 3.00 and a grade of 'B' or higher is required in all coursework for this academic certificate.

Code	Title	Hours
ANTH 103	Introduction to Archaeology	3
ANTH 409	Anthropological Field Methods [1]	3
ANTH 430	Introduction to Archaeological Method and Theory	3
ANTH 432	Historical Artifact Analysis	3
ANTH 449	Lithic Technology	3
ANTH 453	Archaeological Lab Techniques	3
ENGL 317	Technical Writing	3
Select 9 credits of electives from the following:		9
ANTH 100	Introduction to Anthropology	
ANTH 230	World Prehistory	
ANTH 329	North American Indians	
ANTH 422	Plateau Indians	
GEOG 385	GIS Primer	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 335	Geomorphology	
HIST 462	History of the American West	
HIST 461	Idaho and the Pacific Northwest	
STAT 251	Statistical Methods	
Total Hours		30

Courses to total 30 credits for this certificate

1 *Three credits required. Although students can fulfill their field school requirement through the University of Idaho, it can also be fulfilled by attending a field school from a fellow institution. The professional internship must be fulfilled outside the University with a cooperating agency, or CRM firm.*

Diversity and Inclusion Undergraduate Academic Certificate

Code	Title	Hours
Academic Exploration Component		
SOC 201	Introduction to Inequalities & Inclusion	3
Select 6 credits of upper-division emphasis electives from the following courses:		6
AIST/HIST 316	American Indian History	
AMST 301	Studies in American Culture	
ANTH 102	Cultural Anthropology	
ANTH 327	Belief Systems	
ANTH 329	North American Indians	
ANTH 412	Human Races	
ANTH 422	Plateau Indians	
ANTH 462	Human Issues in International Development	
COMM 335	Intercultural Communication	
COMM 410	Conflict Management	
COMM 432	Gender and Communication	
COMM 491	Communication and Aging	
EDCI 302	Teaching Culturally Diverse Learners	
ENGL 380	Studies in U.S. Ethnic Literatures	
ENGL 382	Studies in Queer Literature	
ENGL 383	Studies in African American Literature	
ENGL 384	Studies in American Indian Literature	
ENGL 481	Seminar in Women's Literature	
FCS 410	Growing Old in a New Age	
HIST 315	Comparative African-American Cultures	
HIST 420	History of Women in American Society	
HIST 441	Slavery and Freedom in the Americas	
JAMM 340	Cultural Diversity and the Media	
JAMM 446	Women in the Media	
JAMM 490	Global Media	
MUSH 201	History of Rock and Roll	
MUSH 410	Studies in Jazz History	
POLS 423	Politics, Policy and Gender	
PSYC 315	Psychology of Women	
PSYC 330	Human Sexuality	
PSYC 419	Adult Development and Aging	
SOC 325	Family, Violence, and Society	
SOC 327	Sociology of the Family	
SOC 340	Social Change & Globalization	
SOC 421	Gender and Crime	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
SOC 439	Inequalities in the Justice System	
WGSS 367	Topics in Women's, Gender, and Sexuality Studies	
WGSS 410	Feminist Theory and Action	
Application Component Electives		
Select 3 credits, no more than 6 credits can apply to this certificate.		3
ANTH 203	Workshop	

ANTH 403	Workshop	
SOC 203	Workshop	
SOC 403	Workshop	
Experiential Learning		
Total Hours		12

Courses to total 12 credits for this certificate

Justice Studies Minor

Code	Title	Hours
SOC 130	Introduction to Criminology	3
SOC 328	Deviant Behavior	3
or SOC 330	Juvenile Delinquency	
SOC 332	Sociology of Punishment	3
or SOC 334	Police and Social Control	
Select one of the following:		3
AIST 420	Native American Law	
PHIL 469	The Judicial Process	
PHIL 470	Philosophy of Law	
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
SOC 420	Sociology of Law	
Select at least three courses from the following to total at least 21 credits:		9
AGEC 477	Law, Ethics and the Environment	
ANTH 451	Forensic Anthropology	
PSYC 311	Abnormal Psychology	
SOC/ANTH 201	Introduction to Inequalities & Inclusion	
SOC 325	Family, Violence, and Society	
SOC 327	Sociology of the Family	
SOC 329	Homicide	
SOC 333	Elite and White Collar Crime	
SOC 335	Terrorism, Society and Justice	
SOC 336	Comparative Criminal Justice Systems	
SOC 337	Violence and Society	
SOC 338	Regulation of Vice	
SOC 339	Crime and the Media	
SOC 345	Criminology	
SOC 346	Responding to Risk	
SOC 404	Special Topics	
SOC 415	Citizen's Police Academy	
SOC 421	Gender and Crime	
SOC/ANTH 427	Racial and Ethnic Relations	
SOC 435	Psychopathy and Crime	
SOC 436	Mental Health and Crime	
SOC 439	Inequalities in the Justice System	
SOC 464	Criminology Abroad	
SOC 442	Substance Use and Society	
WLF 205	Wildlife Law Enforcement	
Total Hours		21

Courses to total 21 credits for this minor

Sociology (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for either the B.A. or B.S. degree and the following courses (electives must be approved by the student's advisor):

Code	Title	Hours
SOC 101	Introduction to Sociology	3
Select one course from the following:		3
ANTH 101	Biological Anthropology	
ANTH 102	Cultural Anthropology	
ANTH 103	Introduction to Archaeology	
Select two courses from the following:		6
SOC 309	Social Science Research Methods	
SOC 416	Qualitative Social Science Methods	
SOC 417	Social Data Analysis	
STAT 251	Statistical Methods	
Select one course from the following:		3
SOC 421	Gender and Crime	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
SOC 439	Inequalities in the Justice System	
Select 12 credits in related fields as approved by student's advisor [1]		12
Emphases		
Select one of the following emphases:		24
Criminology (p. 295)		
Inequalities and Globalization (p. 296)		
General Sociology (p. 296)		
Total Hours		51

[1] E.g. Anthropology, Economics, Environmental Science, Geography, History, Political Science, Psychology, Statistics, and Women's, Gender, and Sexuality Studies

A. Criminology

Code	Title	Hours
SOC 130	Introduction to Criminology	3
SOC 331	Criminology Theory	3
Select one course from the following:		3
SOC 460	Capstone: Sociology in Action	
SOC 461	Capstone:Justice Policy Issues	
SOC 462	Senior Practicum	
SOC 464	Criminology Abroad	
Select 15 credits from upper-division emphasis electives:		15
SOC 325	Family, Violence, and Society	
SOC 328	Deviant Behavior	
SOC 329	Homicide	
SOC 330	Juvenile Delinquency	
SOC 332	Sociology of Punishment	
SOC 333	Elite and White Collar Crime	

SOC 334	Police and Social Control
SOC 335	Terrorism, Society and Justice
SOC 336	Comparative Criminal Justice Systems
SOC 337	Violence and Society
SOC 338	Regulation of Vice
SOC 339	Crime and the Media
SOC 345	Criminology
SOC 346	Responding to Risk
SOC 403	Workshop
SOC 404	Special Topics
SOC 420	Sociology of Law
SOC 421	Gender and Crime
SOC 435	Psychopathy and Crime
SOC 436	Mental Health and Crime
SOC 439	Inequalities in the Justice System
SOC 442	Substance Use and Society
SOC 450	Dynamics of Social Protest
SOC 465	Environment, Policy, and Justice
SOC 498	Internship (No more than 6 credits may be counted toward major.)
SOC 499	Directed Study (No more than 6 credits may be counted toward major.)
Total Hours	24

Courses to total 120 credits for this degree

B. Inequalities and Globalization

Code	Title	Hours
ANTH/SOC 201	Introduction to Inequalities & Inclusion	3
SOC 311	Development of Social Theory	3
Select one of the following:		3
SOC 460	Capstone: Sociology in Action	
SOC 462	Senior Practicum	
SOC 464	Criminology Abroad	
Selected emphasis electives:		15
AIST/ANTH 321/SOC 319	Tribal Elders Series	
AIST/ANTH 314/SOC 317	Tribal Sovereignty and Federal Policy	
AIST 344	Indigenous Ways of Knowing	
AIST 401	Contemporary American Indian Issues	
AIST 422	Plateau Indians	
ANTH 462	Human Issues in International Development	
SOC 325	Family, Violence, and Society	
SOC 327	Sociology of the Family	
SOC 335	Terrorism, Society and Justice	
SOC 336	Comparative Criminal Justice Systems	
SOC 340	Social Change & Globalization	
SOC 341	Science, Technology, and Society	
SOC 342	Gender and Science	
SOC 343	Power, Politics, and Society	
SOC 345	Criminology	
SOC 346	Responding to Risk	
SOC 350	Food, Culture, and Society	
SOC 403	Workshop	
SOC 404	Special Topics	
SOC 420	Sociology of Law	
SOC 421	Gender and Crime	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
SOC 428	Self and Society	
SOC 439	Inequalities in the Justice System	
SOC 450	Dynamics of Social Protest	
SOC 465	Environment, Policy, and Justice	
SOC 498	Internship (No more than 6 credits may be counted toward major.)	
SOC 499	Directed Study (no more than 6 credits may be counted toward major)	
Total Hours		24

Courses to total 120 credits for this degree

C. General Sociology

Code	Title	Hours
ANTH/SOC 201	Introduction to Inequalities & Inclusion	3
SOC 311	Development of Social Theory	3
Select one course from the following:		3
SOC 460	Capstone: Sociology in Action	
SOC 462	Senior Practicum	
SOC 464	Criminology Abroad	
Select 15 credits from upper-division emphasis electives:		15
SOC 319	Tribal Elders Series	
SOC 325	Family, Violence, and Society	
SOC 327	Sociology of the Family	
SOC 335	Terrorism, Society and Justice	
SOC 337	Violence and Society	
SOC 340	Social Change & Globalization	
SOC 341	Science, Technology, and Society	
SOC 342	Gender and Science	
SOC 343	Power, Politics, and Society	
SOC 345	Criminology	
SOC 346	Responding to Risk	
SOC 350	Food, Culture, and Society	
SOC 403	Workshop	
SOC 404	Special Topics	
SOC 416	Qualitative Social Science Methods	
SOC 417	Social Data Analysis	
SOC 420	Sociology of Law	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
SOC 428	Self and Society	
SOC 439	Inequalities in the Justice System	
SOC 450	Dynamics of Social Protest	
SOC 465	Environment, Policy, and Justice	

SOC 498	Internship (No more than 6 credits may be counted toward major.)	
SOC 499	Directed Study (No more than 6 credits may be counted toward major.)	
Total Hours		24

Courses to total 120 credits for this degree

Sociology Minor

Code	Title	Hours
SOC 101	Introduction to Sociology	3
Select one of the following research methods courses:		3
ANTH/SOC 416	Qualitative Social Science Methods	
ANTH/SOC 417	Social Data Analysis	
PSYC 218	Introduction to Research in the Behavioral Sciences	
HIST 290	The Historian's Craft	
HIST 300	Digital History	
POLS 235	Political Research Methods and Approaches	
SOC 309	Social Science Research Methods	
Select courses from the following:		12
SOC/ANTH 201	Introduction to Inequalities & Inclusion	
SOC 325	Family, Violence, and Society	
SOC 327	Sociology of the Family	
SOC 335	Terrorism, Society and Justice	
SOC 337	Violence and Society	
SOC 340	Social Change & Globalization	
SOC 341	Science, Technology, and Society	
SOC 342	Gender and Science	
SOC 343	Power, Politics, and Society	
SOC 345	Criminology	
SOC 346	Responding to Risk	
SOC 350	Food, Culture, and Society	
SOC 403	Workshop	
SOC 404	Special Topics	
SOC 415	Citizen's Police Academy	
SOC 416	Qualitative Social Science Methods	
SOC 417	Social Data Analysis	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
SOC 428	Self and Society	
SOC 439	Inequalities in the Justice System	
SOC 450	Dynamics of Social Protest	
SOC 465	Environment, Policy, and Justice	
SOC 498	Internship (No more than 6 credits may be counted toward this minor.)	
SOC 499	Directed Study (No more than 6 credits may be counted toward this minor.)	
Total Hours		18

Courses to total 18 credits for this minor

Department of Theatre Arts

Ann Hoste, Department Chair (Corner of 6th and Rayburn Shoup Hall - 2nd Floor. 208-885-6465. theatre@uidaho.edu, http://www.uidaho.edu/class/theatre/)

Theatre is a liberal art as well as a fine art. The programs offered by the Department of Theatre Arts are designed to encourage the development of the whole person, which is a hallmark of a liberal arts education.

We offer a supportive environment where individuals may achieve their full potential as independent creative artists and compassionate people. Our programs promote knowledge, critical thinking and creative problem solving. As students explore diverse theatre traditions,they gain a deeper understanding of themselves and their role in society. As they participate in the creative process of theatre production, they develop the teamwork and communication skills they will need as effective and successful members of society.

Career prospects for theatre students are vast and varied. Theatre Arts degree graduates find employment in professional theatre, film, television, virtual technology, education, arts management, art therapy, marketing and other fields. The department's program of study also offers a solid foundation for competitive placement in distinguished graduate programs.

The B.A. and B.S. degrees are available for students interested in the study of theatre within a liberal arts background, or as part of a teacher education program. The B.F.A. is a rigorous, competitive program of study for students interested in pursuing careers in professional theatre. An audition or portfolio review and faculty approval are required for acceptance into the B.F.A. program. The progress of B.F.A. candidates is monitored closely each semester, utilizing performance juries and portfolio reviews. A core of theatre work is required of all theatre majors. Specialization is available in performance or design at the undergraduate level, and students enjoy flexibility in shaping their studies according to particular goals or interests. Minors are available in theatre for those students wishing to expand the focus of their degree program.

All Theatre Arts students are expected to maintain a cumulative GPA of 3.0 or above to participate in productions as an actor, stage manager, designer or assistant.

Students must also earn a C or above in all theatre classes to participate in productions the following semester.

Productions help students foster a close working relationship with faculty, and enable the kind of growth that comes through working with professional artists. Class projects and studio work are fully integrated with the department's season to create a balance between theory and skill development.

M.F.A. in Theatre

The department also offers Idaho's only Master of Fine Arts degree in theatre. The program is a rigorous 60-72 credit hour degree designed for students wishing to prepare for a career in the professional theatre. The M.F.A. is also the terminal degree expected for individuals teaching at the university or college level. Graduate students may select an area of emphasis in acting, directing, design and/or technology, dramatic writing or theatre pedagogy. Numerous opportunities exist to design, perform and direct productions, which are

considered an integral part of graduate training. Student progress is monitored by portfolio review or performance jury each semester. Exit procedures for the program include a creative project and comprehensive exam.

Admission requires a minimum of 3.0 GPA, a statement of goals or intent, three letters of recommendation, and a portfolio of design work or a 4-6 minute audition tape. A limited number of graduate assistantships are available for qualified candidates.

M.F.A. in Theatre: Distance-Delivery Format

The department also offers the curriculum for our M.F.A. program via our unique distance-delivered format. This format is designed for place-bound graduate students who are working professionals and unable to relocate to continue their graduate study toward their terminal degree. We offer the distance-ed option in the following areas of emphasis: design, technology and management (DTM), directing, dramatic writing and theatre pedagogy.

Theatre Facilities

The department has two theatre venues as well as a performance studio that is used for productions, rehearsals and classroom. The elegant 417-seat Hartung Theatre features a semi-thrust proscenium stage, new digital lighting and fully-equipped shops for scenery and costume construction. The Forge Theatre is an intimate 100-seat performance studio, equipped for flexible staging, including theatre-in-the-round. The 50-seat Pocket Playhouse is used for both productions and as a class laboratory.

For more information on the department, its programs of study and theatre productions, visit our web site at www.uitheatre.com (http://www.uitheatre.com), or call 208-885-6465.

Majors

- Theatre Arts (B.A. or B.S.) (p. 298)
- Theatre Arts (B.F.A.) (p. 298)

Minors

- Theatre Design and Technology Minor (p. 299)
- Theatre Performance Minor (p. 299)

Theatre Arts Graduate Program

- Theatre Arts (M.F.A.) (p. 299)

Theatre Arts (B.A. or B.S.)

To be eligible for graduation, theatre arts students taking B.A./B.S. options in theatre must achieve a minimum grade of C in all theatre courses required by their major. To participate in departmental productions, a student must maintain a minimum 3.0 overall GPA. Required course work for students pursuing the B.A. in theatre arts includes

1. the university requirements (see regulation J-3 (p.)),
2. the general CLASS core requirements, and
3. the theatre arts core courses listed below.

Required course work for students pursuing the B.S. in theatre arts includes

1. the university requirements (see regulation J-3 (p.)),
2. the general CLASS core, an established minor, or courses in a related field approved by the Theatre Arts Department (20 cr), and the theatre arts core courses listed below.

Code	Title	Hours
THE 101	Introduction to the Theatre	3
THE 102	Introduction to Design	3
THE 103	Theatre Technology I	3
THE 104	Theatre Technology II	3
THE 105	Basics of Performance I	3
THE 106	Basics of Performance II	3
THE 371	Play Analysis	3
THE 390	Theatre Practice II (At least 1 credit in 4 different semesters)	4
THE 468	Theatre History	3
THE 483	Senior Capstone Project	1
Select two of the following courses:		6
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
THE 320	Theatre Management	
Total Hours		35

Courses to total 120 credits for this degree

Theatre Arts (B.F.A.)

The Bachelor of Fine Arts degree is a rigorous training program for students wishing to pursue a career in the professional theatre. The program offers two areas of emphasis: Performance (acting) and DTM (design, theatre technology, and management). Individual courses are selected in consultation with an advisor, so the degree is tailored as closely as possible to a student's specific needs and interests. Students are encouraged to seek out internships with professional theatre companies as part of their program of study.

Admittance to the B.F.A. program in theatre requires an audition or portfolio review and faculty approval. Student progress is closely monitored through performance juries and portfolio reviews each semester.

To be eligible for admittance, continued candidacy, and graduation, the B.F.A. candidate must achieve a minimum grade of C in each theatre course required for the major. To participate in departmental productions, a student pursuing the B.F.A. must maintain a minimum 3.00 overall GPA each semester.

Required course work includes:

1. the university requirements (see regulation J-3 (p.)),
2. the Theatre Arts core courses listed below, and
3. a 30-credit area in either DTM or Performance of departmental-approved coursework.

Theatre Arts Core

Code	Title	Hours
THE 101	Introduction to the Theatre	3
THE 102	Introduction to Design	3

THE 103	Theatre Technology I	3
THE 104	Theatre Technology II	3
THE 105	Basics of Performance I	3
THE 106	Basics of Performance II	3
THE 371	Play Analysis	3
THE 390	Theatre Practice II (Four Credits Required)	4
THE 468	Theatre History	3
THE 483	Senior Capstone Project	1
Select two of the following courses:		6
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
THE 320	Theatre Management	
Total Hours		35

Courses to total 120 credits for this degree

Theatre Arts (M.F.A.)

Master of Fine Arts. Major in Theatre Arts.

The Master of Fine Arts degree at the University of Idaho is a rigorous three-year, 60-72 hour degree designed for talented students wishing to prepare themselves for a career in the professional theatre. Degree tracks in areas of design, directing, performance and technical production are built around specific curriculum categories and individual courses are selected by the candidate in consultation with his or her major professor. Student progress is monitored by portfolio review or performance jury each semester. Exit procedures from the program include a creative project and comprehensive exam.

Candidates must fulfill the general requirements of the Graduate College and a minimum of 60 credits from the course groupings listed below:

Studio Area (12-16 cr)

A minimum of 12 credits are taken in course work directly related to an area of specialization. The studio area of study is individualized to the candidate's specific needs and areas of weakness. Candidates will enroll in M.F.A. Studio each semester of residence excluding summers.

Related Studio Area (9-12 cr)

A minimum of 9 credits are taken in a related studio area which generally pertains directly to the candidate's area of specialization.

Craft Area (8-12 cr)

A minimum of 8 credits are taken in courses to develop specific skills associated with the studio area.

History/Literature/Criticism (9-12 cr)

A minimum of 9 credits are taken in history or literature courses which relate directly to the studio area. Courses taken to fulfill this requirement might include dramatic literature, social history, art history, architectural history, and theatre history.

Internship (12 cr)

A maximum of 12 credits of THE 598, are taken to augment course work with professional experiences with professional regional theatres in the area.

M.F.A. Jury/Portfolio Review (5 cr)

A minimum of 5 credits of THE 515, must be completed with a grade of B or better before the awarding of the degree. A maximum of 1 credit of THE 515 may be taken each semester.

M.F.A. Exit Procedures (3 cr)

Exit procedures vary with the area of specialization. In each case the exit procedure revolves around a thesis project or exam completed sometime in the last two semesters of residence. Projects are designed in consultation with the candidate's graduate committee. Candidates must enroll in THE 596, during the semester the project is undertaken.

Theatre Design and Technology Minor

Code	Title	Hours
THE 103	Theatre Technology I	3
THE 104	Theatre Technology II	3
Select two courses from the following:		6
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
Select 6 credits of electives from upper-division Technical Theatre course work		6
Total Hours		18

Courses to total 18 credits for this minor

Theatre Performance Minor

Code	Title	Hours
THE 105	Basics of Performance I	3
THE 106	Basics of Performance II	3
THE 305	Intermediate Acting I	3
THE 306	Intermediate Acting II	3
THE 471	Directing	3
Select one upper-division Elective		3
Total Hours		18

Courses to total 18 credits for this minor

Program in Women's, Gender, and Sexuality Studies

Leontina Hormel, Program Director (lhormel@uidaho.edu (sreineke@uidaho.edu)**)**

Women’s and Gender Studies is an interdisciplinary academic field devoted to the study of topics concerning women and men, gender and sexuality, feminist theory and research, social history, public health, and women’s and men’s participation in the arts and popular culture. The Women’s and Gender Studies minor offers an interdisciplinary program that allows students to develop critical thinking skills in relation to the scholarly pursuit of knowledge about women, men, the history of feminism, and the social construction of cultural variables, such as gender, sexual identity, age, and race and ethnicity. The Women’s and Gender Studies minor is an asset in the job market for women and men in both the public and private sectors as women increasingly pursue diverse vocations and careers and find it necessary to examine and to validate

their positions as the number of women as supervisors, co-workers, and clients continues to grow. As rigid gender roles become more fluid, men also seek to understand the meaning of these changes for their academic work and lives.

Minors

- Women's, Gender, and Sexuality Studies Minor (p. 300)

Women's, Gender, and Sexuality Studies Minor

Code	Title	Hours
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	3
Select a minimum of three different subject prefixes from the following:		15
ANTH 428	Social and Political Organization	
ANTH 462	Human Issues in International Development	
COMM 432	Gender and Communication	
ENGL 382	Studies in Queer Literature	
ENGL 481	Seminar in Women's Literature (May be retaken once to total 6 credits.)	
FCS 240	Intimate Relationships	
FCS 340	Parent-Child Relationships in Family and Community	
FCS 346	Personal and Family Finance and Management	
FCS 436	Theories of Child and Family Development	
FCS 440	Contemporary Family Relationships	
FCS 445	Issues in Work and Family Life	
FCS 462	Eating Disorders	
HIST 357	Women in Pre-Modern European History	
HIST 420	History of Women in American Society	
JAMM 340	Cultural Diversity and the Media	
POLS 423	Politics, Policy and Gender	
JAMM 446	Women in the Media	
PHIL 405	Feminism & Philosophy	
PSYC 315	Psychology of Women	
PSYC 320	Introduction to Social Psychology	
SOC 325	Family, Violence, and Society	
SOC 327	Sociology of the Family	
SOC 340	Social Change & Globalization	
SOC 342	Gender and Science	
SOC 421	Gender and Crime	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
WGSS 367	Topics in Women's, Gender, and Sexuality Studies	
WGSS 404	Special Topics	
WGSS 410	Feminist Theory and Action	
WGSS 498	Internship in Women's, Gender, and Sexuality Studies	
WGSS 499	Directed Study	
Total Hours		18

Courses to total 18 credits for this minor

With prior approval of the Women's, Gender, and Sexuality Studies committee, a student may also include credit from survey courses, special topics courses, or seminars meeting the guidelines for inclusion of courses in a Women's, Gender, and Sexuality Studies minor. No more than 3 credits may count toward both the student's major and minor.

COLLEGE OF NATURAL RESOURCES

Dennis Becker, Interim Dean; Steven R. Shook, Associate Dean; (202 College of Natural Resources Bldg.; 208-885-6442).

Professional education leading to a degree in forestry began at the University of Idaho in 1909. To the initial curriculum in forest resources have been added those in renewable materials (formerly forest products) (1914), rangeland ecology and management (formerly range resources) (1917), wildlife resources (1942), fishery resources (1951), natural resource conservation (formerly resource recreation and tourism (1974), ecology and conservation biology (formerly natural resource ecology and conservation biology) (1999), and fire ecology and management (2007).

The academic objective of the college is to provide its students with opportunities to become better prepared for lives of responsibility and fulfillment and to acquire competence for entry into professional careers in natural resource science and management. Each of the curricula offered by the college acquaints the student with the physical, biological, and social sciences and with the humanities, thus establishing a basis of general education and preparing the student for the scientific-professional courses addressing the use of forest and range lands and related resources. In addition to the most modern technical and academic classroom instruction, the college prides itself in "hands-on" training, taking advantage of its outstanding field facilities and its emphasis on communications and student activities to enhance leadership potential.

Advantages of Location

The university is ideally located for preparing students for the renewable natural resources professions. Forest and range lands comprise 90 percent of the state's area. Forested areas include many types from the ponderosa pine in southern Idaho to the mixed coniferous and famous white pine of northern Idaho. Range lands vary from spring-fall and winter ranges in the sagebrush-grass and bunchgrass zones to summer ranges in several of the forested zones. Within the forest and range lands are hundreds of lakes and streams and extensive wilderness areas that provide habitat for fish and wildlife and opportunities for wildland recreation.

The values derived from these resources include wood products of all types; cattle and sheep in great numbers; abundant wildlife of many species; world renowned game fish; water for domestic use, power, and irrigation; and recreational activities. These natural study areas and resources enhance students' professional preparation.

Facilities

A modern three-story, 90,000-square-foot building, the Natural Resources Building incorporates classrooms, laboratories, scientific equipment, plant and animal collections, computer access, and other support functions into an ideal environment for natural resources education and research.

A university experimental forest includes over 8,000 acres of forest land located about 25 miles from the campus and is managed by the college as a working forest for demonstration, research, and education. The forest properties include a 200-acre recreation area, two smaller tracts closer to Moscow that serve as outdoor classrooms, and approximately 1,650 acres of forest land near McCall. The Frank Pitkin Forest Nursery site includes 40 acres and three greenhouses that produce 700,000 seedlings annually for student training and research purposes. On the university campus, the Shattuck Arboretum, with over 60 species of trees, provides an outdoor classroom for studies in dendrology. Other field facilities include the McCall Field Campus located on Payette Lake in the mountains of west-central Idaho, the Taylor Wilderness Research Station in the heart of the Frank Church River-of-No-Return Wilderness, and the Lee A. Sharp Range Experimental Area in southern Idaho. In addition, Idaho's 37 million acres of public forest and range lands constitute a vast natural laboratory for students in all of the college's curricula.

To take advantage of these facilities and implement "hands-on" training, the college employs student logging, surveying, planting, and controlled burning crews.

Standing of the College

To assure high professional standards, several curricula in the college are periodically evaluated and rated as accredited or not accredited. Forest resources curricula at UI have been accredited since the Society of American Foresters first began accreditation in 1935. Similarly, in 1985 the rangeland ecology and management curriculum became one of the first in the nation to be accredited by the Society for Range Management. The curriculum in renewable materials is accredited by the Society of Wood Science and Technology.

Departments

The college has four departments/programs: Environmental Science; Fish and Wildlife Sciences; Forest, Rangeland and Fire Sciences; and Natural Resources and Society. Although these departments are separate administrative entities, they share a common philosophy, integrated resource management. Many college faculty hold joint appointments in more than one department; degree programs include courses from multiple departments; and the teaching, research, and service missions of all the departments are integrated and coordinated at the college level. This integration is enhanced by the Forest, Wildlife and Range Experiment Station, described below.

Admission Requirements

General

For a statement of undergraduate and graduate admission requirements, see the admissions (p. 42) portion of the catalog.

Transfer Students

Students who propose to complete a portion of their undergraduate studies at a junior college or elsewhere, before entering UI, should follow as closely as possible one of the curricula for the first two years set forth in the individual department section. A student whose program does not closely approximate one of these will not be able to graduate in four years. Transfer to UI before the end of the sophomore year is usually to the student's advantage. Correspondence with the dean of the college should be initiated at least three months before the date on which the student plans to enroll.

Undergraduate Program

The undergraduate curricula are designed to provide both a general and a professional education. The objective in the first two years is to provide students with a good foundation in the biological, physical, and social sciences and in writing and speaking skills. The basic philosophy of the college is to educate according to the principles of integrated natural resource management while providing specialization in the student's

major area of interest. Because of the emphasis placed on the integrated approach, all curricula in the college, except one option in forest products, have incorporated a common 13-credit set of core courses as follows: Exploring Natural Resources, Ecology, Society and Natural Resources, Introduction to Spatial Analysis for Natural Resource Management, and Natural Resource and Ecosystem Service Economics.

The curricula and options in each program offer as many courses in common with those in other programs as possible, while ensuring that specific professional education requirements are met. Flexibility and individuality in each student's program are provided by curriculum choice, by options within curricula, and by elective credits. Provision is also made for advanced training leading to a military commission.

A variety of scholarships are available to undergraduate students based on need and merit.

Graduate Program

Programs leading to advanced degrees are offered in each of the fields represented by the undergraduate curricula of the college and in natural resources. Both the master's and the doctor's degree, with emphasis on conducting a research project and preparing a thesis or dissertation, are available. A non-thesis master's degree may be obtained in each department. The UI offers a Professional Science Master's degree in Natural Resources and Environmental Sciences. It is an innovative, interdisciplinary degree preparing graduates for science careers in business, government, or nonprofit sectors, focusing on sustainability science as it applies to natural resources and the environment. An interdisciplinary Master of Natural Resources degree focused on management and administration is also available.

Excellent facilities and opportunities are available for graduate study and research in the subject-matter areas. Research in the college is organized through the Idaho Forest, Wildlife and Range Experiment Station. Research is also supported by the Idaho Cooperative Fish and Wildlife Research Unit, the Cooperative Park Studies Unit, and by various state, federal, and private organizations.

Assistantships and fellowships are available to assist highly qualified students in their graduate programs. More information on graduate studies may be obtained by writing the dean of the College of Graduate Studies. Information on available specializations and current projects may be obtained by writing the College of Natural Resources.

Idaho Forest, Wildlife and Range Experiment Station

All members of the college faculty are on the staff of the experiment station. Other members of the station staff include full-time research associates and technicians, as well as graduate student appointees.

The program of the experiment station is closely connected with the graduate training program of the college. Many of the graduate students enrolled in the college are on assistantships associated with station projects.

The station staff conducts research on a wide variety of renewable natural resource management problems in the areas of forestry, forest products, range, resource-based recreation, resource-based tourism, wildlife, and fisheries. Several projects are interdisciplinary. Funds for the station are provided by the university, by some departments of the State of Idaho, and by grants from federal, other state, and private sources. Currently a majority of these funds comes from non-university sources.

More information on station activities may be obtained by writing to the associate director, Idaho Forest, Wildlife and Range Experiment Station, College of Natural Resources.

Internship, and Employment Requirements

Students in Fishery Resources, Ecology and Conservation Biology, and Wildlife Resources complete a senior thesis, senior project, or relevant summer employment as part of their degree requirements. Specific information is contained in the respective departmental sections.

Requirements College for Graduation

University Requirements

See regulation J (p. 91) for general university requirements for degrees.

College Requirements

The minimum credit requirement for a university baccalaureate degree is 120 credits. A minimum cumulative grade-point average of 2.00 in all courses taken in this college is required for graduation. Courses in the college numbered above 299 are not open to any undergraduate student who is on academic probation.

The college may permit substitutions or grant waivers of specified requirements. Thus, for a student with special aptitudes or interests, a program can be devised that will provide a foundation for advanced study or research or meet other acceptable and well-defined career objectives.

Degrees

Curricula leading to the following degrees are offered by the college: Bachelor of Science in Ecology and Conservation Biology (B.S.Ecol.Cons.Biol.) with options in natural resources ecology and conservation biology; Bachelor of Science in Fire Ecology and Management (B.S.Fire.Ecol.Mgmt.); Bachelor of Science in Fishery Resources (B.S.Fish.Res.); Bachelor of Science in Forest Resources (B.S.For.Res.); Bachelor of Science in Natural Resource Conservation (B.S.Nat.Resc.Consv.); Bachelor of Science in Rangeland Ecology and Management (B.S.Rangeland Ecol.-Mgt.); Bachelor of Science in Renewable Materials (B.S.Renew.Mat.); and Bachelor of Science in Wildlife Resources (B.S.Wildl.Res.); Master of Science (thesis and non-thesis options); Master of Natural Resources; Professional Science Master in Natural Resources and Environmental Science; and Doctor of Philosophy in Natural Resources, with dissertation topics in any of the college programs. Academic minors offered include conservation social sciences, forest operations, forest resources; fire ecology and management; fishery resources, wildlife resources, natural resource communication; natural resources; outdoor recreation leadership; parks, protected areas, and wilderness conservation; rangeland ecology and management; renewable materials, and sustainable tourism and leisure enterprises.

Program in Environmental Science

J.D. Wulfhorst, Director (17A College of Natural Resources 83844-1130; phone 208/885-6113; fax 208/885/4674; envs@uidaho.edu; www.uidaho.edu/envs).

The interdisciplinary program in Environmental Science is administered by the College of Natural Resources (p. 301).

The Environmental Science Program offers B.S., M.S., P.S.M., and Ph.D. degrees that emphasize the importance of an interdisciplinary approach for students committed to studying and solving environmental issues.

The diverse multi-disciplinary faculty represents all colleges at the university and includes soil scientists, engineers, geographers, biologists, ecologists, political scientists, sociologists, chemists, philosophers, and hydrologists, as examples.

Career opportunities in the environmental sciences are diverse and numerous. Graduates are employed in the private and public sectors in areas such as natural resource management, pollution prevention, air and water quality monitoring, hazardous waste management, environmental and land use planning, rangeland health, environmental policy, environmental remediation, and environmental regulation and compliance.

The curriculum leading to the B.S. degree in environmental science offers students the opportunity to combine studies in several disciplines and professional fields in order to gain an understanding of the complex nature of environmental problems. In addition to understanding relationships among traditional disciplines, the program creates an integrated and coherent approach to environmental problem solving.

The curriculum includes the university core (general education) requirements, a common set of required courses and breadth electives for all environmental science majors, as well as the student's choice of one of three option areas. The required courses and electives for all majors are designed to build a strong base of knowledge in biological, physical, and social sciences, supplemented by a set of electives, in consultation with an environmental science advisor participating in the program. All students complete a senior project as part of their course of study.

Three option areas are offered: biological science, physical science, and social science.

Professional Certificates: Twelve-credit professional certificates in water science and environmental contamination assessment are also available through the Environmental Science Program. The certificates can be completed on the Moscow campus or through distance education. Procedural details are available in the program office.

Graduate training in the Environmental Science Program provides students with the opportunity to specialize in one of eight emphasis areas: ecology/biological science, waste management, earth science/hydrology, natural resource management, physical science, policy and law, environmental health/toxicology, and water science.

Admission to the graduate program is based on: ability to complete graduate-level work evidenced by undergraduate transcripts; the applicant's statement of research and career objectives; the compatibility of the student's objectives with faculty expertise and program objectives; and availability of graduate faculty to act as major advisor for the applicant. The GRE, applicant's statement of objectives, and three letters of recommendation and resume are required. Students without backgrounds in environmental science may be admitted after certain undergraduate deficiencies are completed.

Questions regarding the B.S. in Environmental Science should be directed to the Student Services Undergraduate Advisor, Chelsea Pugh (208/885-7132, chelseap@uidaho.edu). Questions for the M.S., P.S.M., or Ph.D. programs should be directed to the Graduate Program Coordinator, Dr. Lubia Cajas Cano de Gliniewicz (208/885-6113, lubia@uidaho.edu).

Majors

- Environmental Science (B.S.Env.S.) (p. 303)

Environmental Science Graduate Program

- Environmental Science (M.S.) (p. 307)
- Natural Resources and Environmental Science (P.S.M.) (p. 308)
- Environmental Science (Ph.D.) (p. 308)
- Concurrent J.D./M.S. Environmental Science Degrees (p. 303)

Concurrent J.D./M.S. Environmental Science Degrees

The concurrent J.D./M.S. degree program offers students an opportunity to combine the study of scientific, social, philosophical, and legal aspects of environmental issues. This program equips students for jobs in which the technical knowledge offered through the Environmental Science Program and the professional expertise provided by the College of Law would be beneficial.

Students must apply separately to and be admitted by the College of Graduate Studies/Environmental Science Program, the College of Law, and the Concurrent J.D./M.S. Degree Program. Admission into the concurrent degree program is dependent on a demonstrated ability to excel in an intense, interdisciplinary educational environment.

Students must complete the requirements set out above for an M.S. degree in environmental science and the requirements for a J.D. (see the College of Law (p. 241) section), subject to the following conditions. The first year of study will be exclusively in the College of Law. Because the concurrent degree program requires an M.S. thesis, the fourth year of the program will be primarily in the Environmental Science Program. Up to 12 hours of M.S. graduate credit will be allowed toward the J.D. degree and up to 6 hours of law credit will be allowed toward the M.S. degree from pre-approved lists of classes. This will permit a student to complete the concurrent degree program in as little as four years. If a student fails to complete the master's degree program, no more than 6 credits will be allowed toward the J.D. degree; if a student fails to complete the law program, the student will be required to satisfy all requirements of the Environmental Science Program before receiving the M.S. degree. See the College of Graduate Studies and the College of Law sections for additional information on the graduate/law concurrent degrees.

Questions regarding the concurrent degree program should be addressed to the Environmental Science Program coordinator (208-885-6113) or to the College of Law (208-885-6423).

Environmental Science (B.S.Env.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)), the general requirements for the B.S. degree, and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
COMM 101	Fundamentals of Oral Communication (OR one semester of a foreign language course)	2-4
or COMM 233	Interpersonal Communication	
ENVS 101	Introduction to Environmental Science	3
ENVS 102	Field Activities in Environmental Sciences	1
ENVS 225	International Environmental Issues Seminar	3
ENVS 400	Seminar	1-16
ENVS 497	Senior Research	2-4
ENGL 316	Environmental Writing	3

or ENGL 317	Technical Writing	
or ENGL 318	Science Writing	
PHIL 452	Environmental Philosophy	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Choose one sequence from the following:		4
GEOG 100 & 100L	Physical Geography and Physical Geography Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Ecology - one course from the following:		*3*
BIOL 314	Ecology and Population Biology	
FOR/REM 221/WLF 220	Principles of Ecology	
GEOG 410	Biogeography	
NR 321	Ecology	
Environmental Policy and Regulations - select one course from the following:		*3*
AIST 314	Tribal Sovereignty and Federal Policy	
AIST 421	Native American Natural Resource Law	
ENVS 479	Introduction to Environmental Regulations	
ENVS 577	Law, Ethics and the Environment	
IS 322	International Environmental Organizations	
NRS 311	Public Involvement in Natural Resource Management	
NRS/POLS 364	Politics of the Environment	
NRS/POLS 462	Natural Resource Policy	
Human Dimensions - one course from the following:		*3-4*
AGEC 451	Applied Environmental and Natural Resource Economics	
AIST 344	Indigenous Ways of Knowing	
ANTH/SOC 465	Environment, Policy, and Justice	
HIST 424	American Environmental History	
ECON 272	Foundations of Economic Analysis	
GEOG 345	Global Economic Geography	
NRS/FOR 235	Society and Natural Resources	
NRS 383	Natural Resource and Ecosystem Service Economics	
SOC 350	Food, Culture, and Society	
Water - one course from the following:		*3-4*
ASM 315	Irrigation Systems and Water Management	
BE 453	Northwest Climate and Water Resources Change	
ENVS/SOIL 450	Environmental Hydrology	
ENVS 446	Drinking Water and Human Health	
FISH 415	Limnology	
FOR 462	Watershed Science and Management	
GEOL 309	Ground Water Hydrology	
Sustainability and Integration - one course from the following:		*3*
ENVS 415	Environmental Lifecycle Assessment	
ENVS 428	Pollution Prevention	
ENVS 484	History of Energy	
ENVS 485	Energy Efficiency and Conservation	
FS 436	Principles of Sustainability	
GEOG 435	Climate Change Mitigation	
ENVS 386	Social-Ecological Systems	
REM 456	Integrated Rangeland Management	
Technical - three courses from the following:		*3-12*
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	
BIOL 250	General Microbiology	
BIOL 483	Mammalogy	
BIOL 489	Herpetology	
CHEM 253 & CHEM 254	Quantitative Analysis and Quantitative Analysis: Lab	
CHEM 275	Carbon Compounds	
CHEM 277	Organic Chemistry I	
ENVS 498	Internship	
FOR/NRS 375	Introduction to Spatial Analysis for Natural Resource Management	
or GEOG 385	GIS Primer	
FOR/NRS 472	Remote Sensing of the Environment	
GEOG 301	Meteorology	
GEOG 313	Global Climate Change	
GEOG 401	Climatology	
GEOG 483	Remote Sensing/GIS Integration	
GEOL 361	Geology and the Environment	
MATH 175	Calculus II	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 112 & 112L	General Physics II and General Physics II Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
SOIL 205	The Soil Ecosystem	
WLF 482	Ornithology	
**for Phys. 2 Science Option only:*		
ENVS 428	Pollution Prevention	
ENVS 429	Environmental Audit	
GEOL 375	Geology of National Parks	
REM 407	GIS Application in Fire Ecology and Management	
REM 459	Rangeland Ecology	
Options		
Select one of the following options:		20-62
Biological Science (p. 305)		
Physical Science (p. 305)		
Physical Science 2 (p. 306)		
Social Science (p. 306)		

Biophysical Science (p. 307)	
Total Hours	67-139

A. Biological Science Option

This option is suitable for students wishing to pursue technically oriented careers in environmental professions such as natural resource management, bioremediation, and environmental impact analysis.

Code	Title	Hours
BIOL 250	General Microbiology	3
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
Select 4 electives from at least two of the following areas:		20
Plant Protection:		
ENT 322	General and Applied Entomology	
PLSC 338	Weed Control	
PLSC 410	Invasive Plant Biology	
PLP 415	Plant Pathology	
SOIL 446	Soil Fertility	
Animal Ecology:		
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 315	Techniques Laboratory	
WLF 440	Conservation Biology [1]	
WLF 448	Fish and Wildlife Population Ecology [1]	
Aquatic Ecology (Take all three courses):		
FISH 314	Fish Ecology	
FISH 415	Limnology	
FISH 430	Riparian Ecology and Management	
Forest and Range Systems:		
FOR 330	Forest Soil and Canopy Processes	
FOR 426	Global Fire Ecology and Management	
REM 411	Wildland Habitat Ecology and Assessment	
REM 429	Landscape Ecology	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
Soils:		
FS 409	Principles of Environmental Toxicology	
SOIL 425	Microbial Ecology	
SOIL 438	Pesticides in the Environment	
SOIL 454	Pedology	
Water:		
ENVS 450	Environmental Hydrology	
ENVS 446	Drinking Water and Human Health	
FOR 462	Watershed Science and Management	
GEOL 309	Ground Water Hydrology	
GEOL 410	Techniques of Groundwater Study	
HYDR 412	Environmental Hydrogeology	
Geospatial Tools (take at least 3 of the 6 courses listed below):		
FOR 472	Remote Sensing of the Environment	
GEOG 385	GIS Primer	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
GEOG 475	Intermediate GIS	
GEOG 483	Remote Sensing/GIS Integration	
LARC 495	GIS Applications in Land Planning 2	
Climate Change and Ecosystems (Take all three courses):		
NRS 383	Natural Resource and Ecosystem Service Economics	
GEOG 313	Global Climate Change	
GEOG 410	Biogeography	
Total Hours		32

Courses to total 120 credits for this degree

[1] *Either* WLF 440 *or* WLF 448 *may be used as a depth elective.*

B. Physical Science Option

This option is suitable for students wishing to pursue technical careers in environmental professions such as air, soil, and water pollution abatement, hazardous waste management, waste minimization, and ecological restoration.

Code	Title	Hours
Select 4 electives from at least two of the following areas:		20
Water:		
ENVS 446	Drinking Water and Human Health	
ENVS 450	Environmental Hydrology	
FOR 462	Watershed Science and Management	
GEOL 309	Ground Water Hydrology	
GEOL 410	Techniques of Groundwater Study	
HYDR 412	Environmental Hydrogeology	
Hazardous Waste:		
BE 433	Bioremediation	
BE 452	Environmental Water Quality	
BIOL 380	Biochemistry I	
CHEM 418	Environmental Chemistry	
ENVS 479	Introduction to Environmental Regulations	
FS 409	Principles of Environmental Toxicology	
Geology:		
GEOL 335	Geomorphology	
GEOL 361	Geology and the Environment	
GEOL 422	Principles of Geophysics	
GEOL 423	Principles of Geochemistry	
Mathematics and Statistics:		
MATH 175	Calculus II	
MATH 275	Calculus III	
MATH 310	Ordinary Differential Equations	
STAT 431	Statistical Analysis	
Soils:		
CHEM 418	Environmental Chemistry	
SOIL 415	Soil and Environmental Physics	
SOIL 422	Environmental Soil Chemistry	
SOIL 454	Pedology	
Economics and Management (take all three courses):		

OM 378	Project Management	
ECON 385	Environmental Economics	
ENVS 428	Pollution Prevention	
Geospatial Tools (take at least 3 of the 4 courses):		
FOR 472	Remote Sensing of the Environment	
GEOG 385	GIS Primer	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
GEOG 483	Remote Sensing/GIS Integration	
Climate Change and Emissions Reduction:		
ENVS 485	Energy Efficiency and Conservation	
GEOG 313	Global Climate Change	
GEOG 401	Climatology	
GEOG 435	Climate Change Mitigation	
Total Hours		20

Courses to total 120 credits for this degree

C. Physical Science 2 Option

This option is only available to students in Coeur d'Alene and Idaho Falls.

Code	Title	Hours
Select 4 electives from at least two of the following areas:		20
Water:		
CE 433	Water Quality Management	
ENVS 450	Environmental Hydrology	
FISH 540	Wetland Restoration	
GEOL 309	Ground Water Hydrology	
Mathematics and Statistics:		
MATH 175	Calculus II	
MATH 275	Calculus III	
MATH 310	Ordinary Differential Equations	
STAT 431	Statistical Analysis	
Management Tools (take three of the following):		
ENVS 415	Environmental Lifecycle Assessment	
ENVS 428	Pollution Prevention	
GEOG 385	GIS Primer	
GEOG 475	Intermediate GIS	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
INDT 364	Hazardous Materials	
INDT 448	Project and Program Management	
Environmental Policy and Regulations (Take three of the following):		
NRS 572	Human Dimensions of Restoration Ecology	
ENVS 429	Environmental Audit	
ENVS 436	Principles of Sustainability	
ENVS 479	Introduction to Environmental Regulations	
ENVS 482	Natural Resource Policy and Law	
Energy Systems:		
GEOG 453	Water and Energy Systems	
ENVS 484	History of Energy	
ENVS 485	Energy Efficiency and Conservation	
INDT 415	Impact of Technology on Society	
INDT 434	Power Generation and Distribution	
Sustainability Science:		
ENVS 415	Environmental Lifecycle Assessment	
ENVS 428	Pollution Prevention	
ENVS 436	Principles of Sustainability	
FS 409	Principles of Environmental Toxicology	
INDT 457	Lean to Green Sustainable Technology	
Total Hours		20

Courses to total 120 credits for this degree

D. Social Science Option

This option is suitable for students wishing to pursue careers in environmental professions such as environmental regulation, land use planning, environmental administration, and as a pre-law program for environmental law.

Code	Title	Hours
ENGL 309	Rhetorical Style	3
or ENGL 202	Intro to Professional Writing	
or PHIL 201	Critical Thinking	
SOC 309	Social Science Research Methods	3
or NRS 310	Social Science Methods	
MATH 143	College Algebra	3
Select 5 depth electives from one of the following areas:		15
Policy and Law:		
ENVS 479	Introduction to Environmental Regulations	
PHIL 470	Philosophy of Law	
POLS 364	Politics of the Environment	
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
Administration and Planning:		
ACCT 482	Enterprise Accounting	
COMM 410	Conflict Management	
NRS 386	Social-Ecological Systems	
NRS 387	Environmental Communication Skills	
FOR 484	Forest Policy and Administration	
GEOG 330	Urban Geography	
POLS 364	Politics of the Environment	
POLS 451	Public Administration	
POLS 454	Public Organization Theory	
POLS 462	Natural Resource Policy	
PSYC 416	Industrial/Organizational Psychology	
Green Building and Community Design:		
ARCH 151	Introduction to the Built Environment	
ARCH 266	Materials and Methods	
ARCH 463	Environmental Control Systems I	
ARCH 464	Environmental Control Systems II	
GEOG 435	Climate Change Mitigation	
LARC 380	Water Conservation Technologies	
LARC 480	The Resilient Landscape	
Climate Change - Human Dimensions:		
ECON 385	Environmental Economics	

ENVS 479	Introduction to Environmental Regulations	
ENVS 484	History of Energy	
ENVS 485	Energy Efficiency and Conservation	
GEOG 313	Global Climate Change	
GEOG 411	Natural Hazards and Society	
GEOG 435	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
NRS 383	Natural Resource and Ecosystem Service Economics	
Total Hours		24

Courses to total 120 credits for this degree

E. Biophysical Science Option

This option is intended for students at a distance wishing to pursue technically oriented careers in environmental professions such as natural resource management, bioremediation, and environmental impact analysis. Students need to work closely with an academic advisor to plan the courses needed to fulfill degree requirements which are not available through distance delivery.

Code	Title	Hours
BIOL 250	General Microbiology	3
or PHYS 111	General Physics I	
ENGL 317	Technical Writing	3
MATH 170	Calculus I	4
Select one of the following:		4
GEOG 100 & 100L	Physical Geography and Physical Geography Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
Select 48 credits of electives, including at least one course from each of the following areas (all are available online):		48
Water and Soils:		
BE 452	Environmental Water Quality	
ENVS 446	Drinking Water and Human Health	
ENVS 450	Environmental Hydrology	
SOIL 205	The Soil Ecosystem	
SOIL 438	Pesticides in the Environment	
SOIL 446	Soil Fertility	
Sustainability:		
ENVS 428	Pollution Prevention	
FCS 411	Global Nutrition	
FS 409	Principles of Environmental Toxicology	
FS 436	Principles of Sustainability	
GEOG 313	Global Climate Change	
INDT 415	Impact of Technology on Society	
Ecology:		
FOR 426	Global Fire Ecology and Management	
REM 221	Principles of Ecology	
REM 410	Principles of Vegetation Monitoring and Measurement	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
WLF 440	Conservation Biology	
Energy:		
ENVS 484	History of Energy	
ENVS 485	Energy Efficiency and Conservation	
Geographical Information Systems:		
GEOG 385	GIS Primer	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
REM 407	GIS Application in Fire Ecology and Management	
Social Science:		
IS 322	International Environmental Organizations	
ENVS 428	Pollution Prevention	
ENVS 484	History of Energy	
FCS 411	Global Nutrition	
INDT 415	Impact of Technology on Society	
Total Hours		62

Courses to total 120 credits for this degree.

Environmental Science (M.S.)

Master of Science. Major in Environmental Science.

Each student will design a study plan in consultation with an advisor. The study plan is subject to approval by the director and the Graduate College.

There are five requirements for the M.S. degree in environmental science:

1. Depth requirement: the graduate program is structured around three option areas, biological science, physical science, or social science. A student must complete a minimum of 12 credits (thesis degree) or 15 credits (non-thesis degree) in one of the three option areas;
2. Breadth requirement: A student must complete a minimum of 3 credits at the MS level in each of the other two option areas;
3. A student must complete one course (3 cr) in appropriate research methods or statistics at the 500 level;
4. ENVS 501 (2 cr);
5. ENVS 500 (6 cr., thesis degree) or ENVS 599 (3 cr., non-thesis degree).

These requirements may be augmented to compensate for undergraduate deficiencies.

The thesis degree consists of at least 30 graduate credits, including at least 6 credits and a maximum of 10 credits of thesis and a minimum of 24 credits of course work. For the thesis option, at least 21 credits in the option and supporting area must be at the 500 level, including a minimum of 6 hours of research and thesis (ENVS 500). The non-thesis degree program requires at least 30 graduate credits, including a minimum of 3 credits of ENVS 599 (Non-thesis Master's Research) and 27 credits of course work. For the non-thesis option, at least 21 credits in the option and supporting area must be at the 500 level. For both thesis and non-thesis options, a student can take up to 9 credits at the 400 level in the option and supporting area (one class can be at the 300 level in a supporting area with committee approval). The thesis or non-thesis research part of the program for each student consists of a substantial project in which the student demonstrates ability to do rigorous independent work.

Environmental Science (Ph.D.)

Doctor of Philosophy. Major in Environmental Science.

Admission to the doctoral program is based on the compatibility of the student's research interests with those of the major professor, the availability of research support, and the student's academic record and potential. Applicants are expected to have the prerequisites as specified for the M.S. degree. The student develops a graduate program of at least 78 semester hours in consultation with his or her major professor and supervisory committee. The student is expected to actively participate in one or more seminar presentations during the course of his or her graduate career. Teaching experience is required and is obtained through participation in the program's course offerings. Qualifying examinations are required for those students entering the Ph.D. program without a master's degree. Preliminary examinations are required prior to admission to final candidacy for the degree. All candidates prepare a formal dissertation reflecting original thought and independent investigation and defend it during an oral presentation as a final step toward their degree. Publication in the peer-reviewed, scientific literature is expected. Contact the program office for specific program requirements and procedures.

Natural Resources and Environmental Science (P.S.M.)

Professional Science Master. Major in Natural Resources and Environmental Science.

The Professional Science Master (P.S.M.) degree is a partner ship of the University of Idaho and regional employers, where graduates are immersed in enhanced learning and are faced with real-world learning scenarios. The P.S.M. is a national program with over 165 partner institutions participating in coordination with the National Professinal Science Masters Association (NPSMA).

There are 3 requirements for the P.S.M. degree in Natural Resources and Environmental Science: (1) 12 credits of professional skills courses, (2) 15 credits in the student's Emphasis Area, and (3) 3 credits of elective skills courses.

Code	Title	Hours
Professional Skills Courses (12 cr)		
At least three of the four skills courses must be taken at the 500 level. Joint-listed courses must be taken at the graduate level. At least two of the skills courses must be designated PSM core courses, which include BUS 551, BUS 551 and ENGL 522.		12
Scientific Communication		
AOLL 528	Program Planning, Development, and Evaluation	
ENGL 522	Communication for Science Professionals	
FOR 546	Science Synthesis and Communication	
Scientific Ethics		
PHIL 450	Ethics in Science	
PHIL 552	Environmental Philosophy	
Leadership and Innovation		
AOLL 583	Organizational Leadership	
BUS 552	Management of Scientific Innovation	
EDAD 530	Ethical Leadership and Law in Education	
MHR 513	Leadership and Organizational Behavior	
Managing Projects and Budgets		
ACCT 582	Enterprise Accounting	
BUS 551	Managing Scientific Projects	
COMM 410	Conflict Management	
Emphasis Area Courses (15 cr)		
The following scientific tracks serve as emphasis areas. Students must select 15 credits of electives from one of these tracks:		15
Environmental Contamination		
ENVS 428	Pollution Prevention	
ENVS 450	Environmental Hydrology	
FS 509	Principles of Environmental Toxicology	
ENVS 541	Sampling and Analysis of Environmental Contaminants	
ENVS 579	Introduction to Environmental Regulations	
FOR 554	Air Quality, Pollution, and Smoke	
FS 564	Food Toxicology	
SOIL 438	Pesticides in the Environment	
Sustainability Science		
AGEC/ENVS 577	Law, Ethics and the Environment	
ARCH 516	Social Sustainability in Contemporary Cities	
ENVS 485	Energy Efficiency and Conservation	
ENVS 428	Pollution Prevention	
ENVS 536	Principles of Sustainability	
FISH 540	Wetland Restoration	
FS 509	Principles of Environmental Toxicology	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
GEOG 513	Global Climate Change	
REM 440	Restoration Ecology	
WR 506	Interdisciplinary Methods in Water Resources	
Climate Change		
BE 553	Northwest Climate and Water Resources Change	
BIOP 520	Introduction to Bioregional Planning	
FOR 462	Watershed Science and Management	
GEOG 401	Climatology	
GEOG 410	Biogeography	
GEOG 420	Land, Resources, and Environment	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
NRS 510	Applications of Communication Theory in Natural Resource Management	
GEOG 513	Global Climate Change	
Water Resources Management		
BE 552	Environmental Water Quality	
ENVS 450	Environmental Hydrology	
ENVS 546	Drinking Water and Human Health	
FISH 540	Wetland Restoration	
FOR 462	Watershed Science and Management	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	

HYDR 512	Environmental Hydrogeology
NRS 510	Applications of Communication Theory in Natural Resource Management
NRS 573	Planning & Decision Making for Watershed Management
WR 506	Interdisciplinary Methods in Water Resources
Management of Regulated River Systems	
CE 421	Engineering Hydrology
CE 428	Open Channel Hydraulics
CE/ME 520	Fluid Dynamics
CE 535	Fluvial Geomorphology and River Mechanics
FISH 430	Riparian Ecology and Management
FISH 515	Large River Fisheries
NRS 573	Planning & Decision Making for Watershed Management
NRS 510	Applications of Communication Theory in Natural Resource Management
Ecohydrological Science and Management	
BE 552	Environmental Water Quality
ENVS 450	Environmental Hydrology
FISH 415	Limnology
FISH 430	Riparian Ecology and Management
FISH 515	Large River Fisheries
FOR 462	Watershed Science and Management
FISH 540	Wetland Restoration
GEOG 524	Hydrologic Applications of GIS and Remote Sensing
HYDR 512	Environmental Hydrogeology
NRS 510	Applications of Communication Theory in Natural Resource Management
NRS 573	Planning & Decision Making for Watershed Management
REM 440	Restoration Ecology
REM 452	Western Wildland Landscapes
Bioenergy and Bioproducts	
AGEC 451	Applied Environmental and Natural Resource Economics
BE 585	Fundamentals of Bioenergy and Bioproducts
BE 592	Biofuels
BE 594	Thermochemical Technologies for Biomass Conversion
ENVS/FS 536	Principles of Sustainability
FS 538	Introduction to Physical Properties of Food
FS 570	Advanced Food Technology
RMAT 438	Introduction to Lignocellulosic Chemistry
RMAT 536	Biocomposites
RMAT 538	Lignocellulosic Biomass Chemistry
PLSC 407	Field Crop Production
PLSC 546	Plant Breeding
Sustainable Food and Fiber	
AGED 406	Exploring International Agriculture
AGED 548	Foundations of Extension Education
ENVS/FS 536	Principles of Sustainability
FS 510	Functional Foods and Health
FS 516	Food Laws
FS 564	Food Toxicology
PLSC 407	Field Crop Production
PLSC 546	Plant Breeding
PLSC 551	Vegetable Crops
SOIL 417	Market Garden Practicum
SOIL 438	Pesticides in the Environment
SOIL 446	Soil Fertility
SOIL 527	Sustainable Food Systems
Geographic Information Skills, Mapping, and Monitoring	
ECE 516	Image Sensors and Systems
FOR 554	Air Quality, Pollution, and Smoke
GEOG 524	Hydrologic Applications of GIS and Remote Sensing
REM 507	Landscape and Habitat Dynamics
REM 510	GIS Application in Fire Ecology and Management
STAT 419	Introduction to SAS/R Programming
STAT 555	Statistical Ecology
Elective Science Skills (3 cr)	
The elective Skills Course should complement the student's Emphasis Area, but does not have to be from within that Emphasis Area.	3
Total Hours	30

Courses to total 30 credits for this degree

Department of Fish and Wildlife Sciences

Lisette P. Waits, Dept. Head (104 CNR Bldg. 83844-1136; phone 208-885-6434; fish_wildlife@uidaho.edu).

Fish and wildlife science professionals apply the principles of biology and ecology to understand how fish and wildlife populations interact with each other and with their environment. We help students develop a solid foundation in fish and wildlife biology and ecology, a strong scientific and quantitative background, appropriate technical expertise, and an appreciation for fish and wildlife as a public trust resource. Our degrees emphasize critical thinking through coursework and hands-on field and laboratory experiences, and our graduates are equipped to be successful natural resource managers and scientists in a rapidly changing world. There are four areas of emphasis within the department: **aquaculture, fisheries ecology and management, wildlife ecology and management, and conservation biology.**

Fishery professionals conduct research or apply management principles to aquatic ecosystems. They may become involved with managing recreationally and commercially important fish populations, biological monitoring, environmental impact assessment, conservation of endangered fish, hatchery operation, commercial fish farming, control and prevention of fish diseases, or management of stream or lake ecosystems.

Wildlife professionals, are involved in the conservation and management of game and nongame wildlife species. This includes studying wildlife and their habitat to provide a biological basis for management programs. Wildlife professionals often coordinate wildlife management programs

with other natural resource activities such as forest management, range management, and land use planning.

Professionals within Ecology and Conservation Biology use the tools and basic principles of ecology (such as population dynamics and genetics) in combination with social science principles to solve critical issues related to conserving species and ecosystems. They write species recovery plans, manage parks and protected areas, and advise policy makers and land-use planners.

Professions in Fish and Wildlife Sciences and Ecology and Conservation Biology also include opportunities in law enforcement, environmental education, and public relations.

Bachelor of Science degrees are offered in Fishery Resources, Wildlife Resources, and Ecology and Conservation biology. In the Fishery Resources degree, students may design a program that emphasizes fisheries management, fisheries ecology, aquatic ecology, or aquaculture. In the Wildlife Resources degree, the program emphasizes the principles of wildlife ecology, population dynamics, and management. Students in the Ecology and Conservation Biology major choose an Ecology or Conservation Biology option. Elective courses in all programs provide an opportunity to gain additional knowledge in a special area of interest or to broaden into other fields. To ensure that students gains practical experience, Fisheries Resources and Wildlife Resources students are required to complete an internship, whereas Ecology and Conservation Biology students are required to complete a senior thesis or project. For more information on the Ecology and Conservation Biology program (p. 301), see the section on "Natural Resources (p. 301)."

Our graduates find employment with numerous federal and state agencies, educational institutions, and in the private sector. These include the U.S. Fish and Wildlife Service, the Bureau of Land Management, the U.S. Forest Service, the National Marine Fisheries Service, the U.S. Army Corps of Engineers, Department of Environmental Quality, state fish and game or conservation departments, tribal agencies, and private organizations such as power companies, commercial fish growers, consulting agencies, and non-profit organizations. Recent surveys have shown that baccalaureate graduates from the department obtain employment at a rate considerably above the national average.

The graduate program is offered to meet the needs of students who are interested in either specialized or generalized advanced study. Because specific requirements for each degree are determined by the student's supervisory committee, individual study plans allow for differences in preparation while providing all students with a comparable background by the time the graduate program is completed.

In addition to the admission requirements of the College of Graduate Studies, the prospective student should have maintained a cumulative grade-point average of at least 3.00 (on a 4.00 scale) during the undergraduate program. Acceptance of students who do not have this minimum grade-point average or other stated requirements is possible, subject to recommendation by the department head and approval of the College of Graduate Studies. The Graduate Record Examination is required for admission. At least one summer's experience with a natural resource agency or research group is strongly recommended.

The graduate program in **fishery resources** is oriented toward the applied and basic aspects of fishery management, aquatic ecology, and fish health management. The fishery management area includes a focus on fish population dynamics and analysis, management systems, and environmental stresses; the aquatic ecology area includes limnology and habitat management; and the fish health management area includes finfish culture (coldwater and warmwater), fish disease diagnostics and epidemiology, and fish physiology. The USGS Cooperative Fish and Wildlife Research Unit and the Aquaculture Research Institute also provide important opportunities for graduate studies in fishery resources and aquaculture.

Students planning to begin graduate studies in fishery resources should have a broad background in the life sciences with specific emphasis on courses in the fishery sciences. They should also have a background in quantitative data processing and professional communication, both oral and written.

Admission to the graduate program in **wildlife resources** requires an undergraduate degree with a major in wildlife resources or a closely related field emphasizing the principles of wildlife ecology, population dynamics, and management. Students with differing backgrounds are also admitted if they have substantial preparation in the biological and physical sciences. Candidates must fulfill entrance requirements of the Graduate College and of the Department of Fish and Wildlife Sciences.

Graduate work in wildlife resources offers students the opportunity to do research in one of several areas including wildlife ecology and behavior, predator ecology, population dynamics, wildlife habitat relationships, conservation biology, conservation genetics as well as management of game and nongame species. Students are encouraged to select topics that will benefit wildlife conservation and management at the state, national or international level. Graduate projects in wildlife resources may be developed in cooperation with the USGS Cooperative Fish and Wildlife Research Unit, an active participant in the department and research program of the college.

In addition to the requirements listed above, graduate admission is based on the compatibility of the student's research interests with the areas of concentration in the department and the availability of research faculty.

Our research mission is to conduct novel research that helps our partners manage fish and wildlife populations and their ecosystems in complex and continually changing biological, social, economic and political landscapes. We support economic enhancement through research and development of methods and approaches for improved and sustainable resource use. We provide natural resource professionals and the general public with current scientific information relevant to policy and management.

For additional information, please call the department at 208-885-6434 or visit the web at http://www.uidaho.edu/cnr/departments/fish-and-wildlife-sciences.

Majors

- Fishery Resources (B.S.Fish.Res.) (p. 311)
- Ecology and Conservation Biology (B.S.Ecol.Cons.Biol.) - See the section on"Natural Resources (p. 321)."
- Wildlife Resources (B.S.Wildl.Res.) (p. 312)

Minors

- Aquaculture Minor (p. 311)
- Fishery Resources Minor (p. 312)
- Wildlife Resources Minor (p. 313)

Certificates

- Tribal Natural Resources Stewardship Undergraduate Certificate (p. 312)

Fish and Wildlife Sciences Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Fish and Wildlife Sciences. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Fish and Wildlife Science (M.S.) (p. 311)

Aquaculture Minor

Code	Title	Hours
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
FISH 422	Concepts in Aquaculture	4
FISH 424	Fish Health Management	4
FISH 481	Ichthyology	4
Select two courses from the following:		6
ASM 107	Beginning Welding	
AVS 305	Animal Nutrition	
ENTR 414	Entrepreneurship	
FISH 498	Internship	
MKTG 321	Marketing	
Total Hours		23

Courses to total 23 credits for this minor

Fish and Wildlife Science (M.S.)

Master of Science. Major in Natural Resources.

The M.S. degree with major study in either fishery resources or wildlife resources is awarded when a student has met the requirements listed below. A formal graduate program of at least 30 semester hours is chosen in consultation with the major professor and the student's supervisory committee. At least 18 credits must be courses numbered 500 and above. For the thesis option, no more than 10 of the 500-level credits of Research and Thesis may be applied toward the degree.

1. Thesis option: General M.S. requirements apply except that the thesis requirement may be fulfilled by one or more journal publications at the discretion of the candidate's supervisory committee.
2. Non-thesis option: General M.S. requirements apply. A professional paper is required.

The Ph.D. degree is available with a major in natural resources. General Ph.D. requirements apply; see the section on "Natural Resources (p. 301)" for details.

Fishery Resources (B.S.Fish.Res.)

Students pursuing a B.S. degree in fishery resources (management or aquaculture emphasis) must have received a grade of C or better in each of the following four indicator courses to register for fish- and wildlife-prefixed upper-division courses and to graduate with a B.S.Fish.Res.: BIOL 114 and BIOL 213, STAT 251, and FOR 221.

To graduate, students must achieve a grade of C or better in each fish- and wildlife-prefixed upper-division course listed in the requirements for the B.S. degree in fishery resources.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
First and Second Years		
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Principles of Biological Structure and Function	4
COMM 101	Fundamentals of Oral Communication	2
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
ECON 202	Principles of Microeconomics	3
FISH 102	The Fish and Wildlife Professions	1
FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
NR 101	Exploring Natural Resources	2
STAT 251	Statistical Methods	3
WLF 201	Fish and Wildlife Applications	2
WLF 370	Management and Communication of Scientific Data	3
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		4
GEOG 100 & 100L	Physical Geography and Physical Geography Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
Third and Fourth Years		
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 310	Genetics	3
or GENE 314	General Genetics	
FISH 314	Fish Ecology	3
FISH 315	Fish Ecology Field Techniques and Methods	2
FISH 398	Renewable Natural Resources Internship	2
or WLF 398	Renewable Natural Resources Internship	

FISH 411	Fish Physiology	2
FISH 415	Limnology	4
FISH 418	Fisheries Management	4
FISH 422	Concepts in Aquaculture	4
or FISH 424	Fish Health Management	
FISH 481	Ichthyology	4
FISH 495	Fisheries Seminar	1
NRS 383	Natural Resource and Ecosystem Service Economics	3
WLF 448	Fish and Wildlife Population Ecology	4
Select one of the following electives: [1]		3-4
FISH 422	Concepts in Aquaculture	
FISH 424	Fish Health Management	
FISH 430	Riparian Ecology and Management	
FISH 450 & FISH 451	Ecology & Conservation of Freshwater Invertebrates and Freshwater Invertebrate Field Methods	
Total Hours		96-97

Courses to total 120 credits for this degree

[1] Note: If choosing FISH 422 or FISH 424 it must be a different course than selected above.

Fishery Resources Minor

Code	Title	Hours
BIOL 314	Ecology and Population Biology	3-4
or FOR 221	Principles of Ecology	
FISH 314	Fish Ecology	3
FISH 315	Fish Ecology Field Techniques and Methods	2
FISH 495	Fisheries Seminar	1
Select three courses from the following:		11-12
FISH 415	Limnology	
FISH 418	Fisheries Management	
FISH 422	Concepts in Aquaculture	
FISH 424	Fish Health Management	
FISH 430	Riparian Ecology and Management	
FISH 481	Ichthyology	
Total Hours		20-22

Courses to total 20 credits for this minor

Tribal Natural Resources Stewardship Undergraduate Certificate

Code	Title	Hours
AIST 314	Tribal Sovereignty and Federal Policy	3
AIST 298	Tribal Natural Resource Internship	1
or AIST 498	Internship	
FOR/REM 221/ WLF 220	Principles of Ecology	3
FOR 310	Indigenous Culture and Ecology	3
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
or GEOG 385	GIS Primer	
REM 280	Introduction to Wildland Restoration	2
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Select one of the following:		3-4
BE 433	Bioremediation	
BE 450	Environmental Hydrology	
FISH 314	Fish Ecology	
FISH 415	Limnology	
FISH 430	Riparian Ecology and Management	
FOR 326	Fire Ecology and Management	
FOR 462	Watershed Science and Management	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
LARC 480	The Resilient Landscape	
REM 280	Introduction to Wildland Restoration	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 440	Conservation Biology	
Select one of the following:		3-4
FISH 481	Ichthyology	
FOR 220	Forest Biology & Dendrology	
PLSC 205	General Botany	
REM 252	Wildland Plant Identification	
REM 253	Wildland Plant Identification Field Studies	
REM 341	Systematic Botany	
Total Hours		25-27

Courses to total 26 credits for this certificate

Wildlife Resources (B.S.Wildl.Res.)

Students pursuing a B.S. in wildlife resources must have received a grade of C or better in each of the following four indicator courses to register in fish- and wildlife-prefixed upper-division courses and to graduate with a B.S. in wildlife resources: BIOL 114 and BIOL 213, STAT 251, and one of FOR 221, WLF 220 or NR 321.

To graduate, a student must receive a grade of C or better in each fish- and wildlife-prefixed upper-division course listed in the requirements for the B.S. in wildlife resources.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
First and Second Years		
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3

BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Principles of Biological Structure and Function	4
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Laboratory	1
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
COMM 101	Fundamentals of Oral Communication	2
ECON 202	Principles of Microeconomics	3
FOR/REM 221/ WLF 220	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
NR 101	Exploring Natural Resources	2
STAT 251	Statistical Methods	3
WLF 102	The Fish and Wildlife Professions	1
WLF 201	Fish and Wildlife Applications	2
WLF 370	Management and Communication of Scientific Data	2
Select one of the following:		3-4
FOR 220	Forest Biology & Dendrology	
REM 341	Systematic Botany	
REM 252 & REM 253	Wildland Plant Identification and Wildland Plant Identification Field Studies	
Select one of the following:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Third and Fourth Years		
BIOL 310	Genetics	3
or GENE 314	General Genetics	
FISH 398	Renewable Natural Resources Internship	2
or WLF 398	Renewable Natural Resources Internship	
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 315	Techniques Laboratory	2
WLF 371	Physiological Ecology of Wildlife	2
WLF 411	Wildland Habitat Ecology and Assessment	2
WLF 440	Conservation Biology	3
WLF 448	Fish and Wildlife Population Ecology	4
WLF 492	Wildlife Management	4
Select one of the following:		2-3
COMM 410	Conflict Management	
FOR 484	Forest Policy and Administration	
NRS 250	Environmental Problem Solving	
NRS 387	Environmental Communication Skills	
NRS 462	Natural Resource Policy	
NRS 311	Public Involvement in Natural Resource Management	
WLF 205	Wildlife Law Enforcement	
Select two Restricted elective courses from the following (must receive a grade of C or better):		7-8
BIOL 483	Mammalogy	
BIOL 489	Herpetology	
FISH 481	Ichthyology	
WLF 482	Ornithology	
Total Hours		91-94

Courses to total 120 credits for this degree

Wildlife Resources Minor

Code	Title	Hours
BIOL 314	Ecology and Population Biology	4
or FOR 221	Principles of Ecology	
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 315	Techniques Laboratory	2
Select any combination of the following:		9-12
BIOL 483	Mammalogy	
BIOL 489	Herpetology	
WLF 371	Physiological Ecology of Wildlife	
WLF 440	Conservation Biology	
WLF 448	Fish and Wildlife Population Ecology	
WLF 482	Ornithology	
WLF 492	Wildlife Management	
Total Hours		18-21

Courses to total 18 credits for this minor

Department of Forest, Rangeland, and Fire Sciences

Charles Goebel, Department Head (204 CNR Bldg. 83844-1133; phone 208-885-7952; frfs@uidaho.edu).

The Department of Forest, Rangeland, and Fire Sciences (FRFS, www.uidaho.edu/frfs) offers four undergraduate degrees: Bachelor of Science in Forest Resources; Bachelor of Science in Fire Ecology and Management; Bachelor of Science in Rangeland Ecology and Management; and Bachelor of Science in Renewable Materials. While graduate degrees are administered through the College of Natural Resources, students can select a specialization within FRFS that would lead to either a Master of Science in Natural Resources (thesis and non-thesis options); or a Doctor of Philosophy in Natural Resources (see Forest, Rangeland, and Fire Sciences Graduate Degree Programs for more information). Students seeking an advanced degree of the professional nature should explore the Master of Natural Resources program, for which faculty in FRFS serve as mentors.

Undergraduate and graduate students in the Department of Forest, Rangeland, and Fire Sciences are provided with an opportunity to learn from globally-recognized faculty. Using a mix of teaching methods, students are exposed to both the scientific background and hands-on practice needed to become leaders in their chosen field. Extensive

opportunities exist for students to develop as practitioners and scientists through partnership with our Experimental Forest, Pitkin Forest Nursery, numerous laboratories (Fire, Forest Operations, Paleoecology, Rangeland Ecology, Renewable Materials, Seedling Quality) and regional cooperative units.

Department faculty and administration strive to provide graduates with diverse opportunities for personal growth while maintaining curricula that ensure competency upon entering the workforce or continuing into advanced study. Students are provided with courses that expand critical thinking skills and understanding of concepts rather than rote learning of facts and principles. Class sizes are manager to appropriate student to faculty ratios for the subject matter to be taught effectively. Courses emphasize the dynamic nature of forest, rangeland, and fire sciences and technologies by teaching new concepts and methods and incorporating new knowledge as it emerges. Field and lab-based study is also an integral part of all curricula. The faculty and staff of the college encourage and assist students in finding seasonal professional employment and opportunities for involvement in student clubs and professional organizations. Faculty members seek to provide research opportunities for students that advance science in the broad fields of study in which they have expertise.

Bachelor of Science in Fire Ecology and Management

The College of Natural Resources has provided over 35 years of leadership in fire education. We offer more courses focused on fire than any other natural resources school in the country. Our courses and degree programs are developed to help students understand fundamental concepts, the science behind issues, and the skills to become leaders in fire and natural resource management. Our fire research program attracts top graduate students and collaborates both with the leading fire scientists and innovative effective fire managers. Our research and outreach efforts provide useful, timely and sound science to address fire ecology and management issues across the state, region and nation.

We provide a range of educational opportunities for wildland fire managers and others interested in a career in wildland fire research with a focus on solving real world problems through an interdisciplinary approach that focuses on educating current and future fire professional leaders. The BS in Fire Ecology and Management has recently been recognized by the national Association for Fire Ecology as a leading program in the US.

A fire ecology and management academic minor, and academic certificates in fire ecology, management, and technology are also available.

Bachelor of Science in Forestry

Forestry is "managing and using for human benefit the forest lands and natural resources that occur on and in association with forest lands." These benefits may include values, services, or products such as stable human communities, aesthetics, biodiversity, recreational opportunities, clean water and air, soil protection, forage, fish and wildlife, medicinal and ornamental items, wood products, and many others. One-third of the nation's land area and 40 percent of Idaho's land area are forested. Present-day forest management requires professionals highly trained in an interdisciplinary approach that adapts to scientific developments and sociological and economic constraints while sustaining healthy forest ecosystems.

The B.S. Forestry is accredited by the Society of American Foresters, the specialized accrediting body recognized by the Commission on Recognition of Post-secondary Accreditation as the accrediting agency for forestry in the United States.

The B.S. Forestry curriculum provides students with an interdisciplinary education founded on the principles of science-based stewardship. Students are given an opportunity to strengthen their understanding of ecology, forest ecosystem processes, social sciences, remote sensing and geographic information systems, silviculture, pest management, forest operations, and other specialties by selective use of elective credits. Graduates with a professional forestry degree are employed by a wide range of federal and state forestry and natural resource agencies; private forestland companies, such as Potlatch, Forest Capital, Weyerhaeuser; consulting companies that work with private non-industrial forest landowners and others that do environmental assessments and monitoring of forest lands; and non-governmental agencies that manage and/or are interested in forest ecosystem land management.

Specific learning outcomes associated with the B.S. Forestry include developing the ability to:

- Communicate effectively by listening actively, formulating, articulating, and explaining ideas clearly using oral and written techniques
- Demonstrate critical thinking and problem-solving skills
- Demonstrate skills in working with teams of people, including effective leadership of groups working toward a common goal
- Develop and apply scientific knowledge (i.e. ecological, social, and economic) to evaluate and justify forest management decisions
- Access, evaluate and appropriately use scientific literature, technologies, and expert advice when considering critical resource issues and management alternatives
- Forecast potential outcomes of forestry decisions in time and space, while considering risks and uncertainty
- Assess forest, site, and socioeconomic conditions across temporal and spatial scales using appropriate metrics

Bachelor of Science in Rangeland Conservation

The term RANGELAND was invented in the United States to describe the extensive, unforested lands dominating the western half of the continent. Rangelands around the world are known by many names including prairie, plains, grassland, shrubland, savanna, steppe, desert, semi-desert, sward, tundra, and alpine. These lands form about half of the earth's land surface. Idaho is 48% rangeland. Limited precipitation, generally sparse vegetation, sharp climatic extremes, highly variable soils, frequent salinity, and diverse topography characterize the kind of land called RANGELAND. Rangelands produce a wide variety of goods and services desired by society, including livestock forage, wildlife habitat, water, mineral resources, wood products, wild-land recreation, open space, and natural beauty. The geographic extent and many important resources of rangelands make their proper use and management vitally important to people everywhere.

Rangeland managers enjoy careers with a variety of private organizations and government agencies. State and federal land management agencies, such as the US Forest Service, Bureau of Land Management, and State Department of Lands, hire rangeland professionals to oversee the management of public rangelands. Wildlife management agencies

also hire range managers to maintain and improve wildlife habitat. Private land owners employ range consultants and managers to oversee livestock operations, enhance hunting programs, maintain forage resources and control weeds. Biological assessment companies require the careful measurement and assessment of vegetation resources; therefore they often hire rangeland professionals. A growing number of rangeland professionals work as natural resource facilitators to bring rangeland stakeholders together to craft plans for environmental stewardship. Internships are also available. Over 85% of the graduates of the B.S. Rangeland Conservation program at the University of Idaho in the last 10 years have secured careers in natural resource management or advanced to graduate school.

Bachelor of Science in Renewable Materials

Renewable materials are those that can be replaced by biological means, such as sustainably-managed forests or residues from agricultural food crops, and offer environmental benefits as well as useful products for society. Renewable and biodegradable materials typically consume less energy in their preparation, and can be reused, recycled or composted at the end of their useful life. Wood is a primary renewable, recyclable and biodegradable material in the U.S. and the world and is used to produce over 5,000 different products for shelter, packaging, and chemicals. Renewable, bio-based energy sources reduce greenhouse gas emissions and contribute to energy self-reliance.

The B.S. Renewable Materials curriculum prepares students for a wide range of careers in the manufacture, marketing, and utilization of sustainable, renewable materials. Interdisciplinary coursework and project-based learning opportunities lead to a choice of several career tracks including procurement of timber and other renewable materials; production management, marketing and distribution of bio-based products; green building materials selection, construction and design; and bio-based energy production systems. This degree program is accredited by the Society of Wood Science and Technology. The undergraduate curriculum is structured, but still allows students to follow specific interests through course selection from restricted and unrestricted electives in the areas of architecture, business, entrepreneurship, forest operations, and agriculture.

Fire Ecology, Management and Technology Academic Certificate

This 15-credit certificate program is designed for traditional and non-traditional students who would like to receive more depth in the concepts, science and tools currently used in fire ecology and management, or for those seeking educational requirements required for federal employment. After completing this certificate program students will be able to apply sound science to solving complex issues facing fire management. Many of our students combine this certificate with other degrees.

Students who wish to complete the certificate program may register for courses online. We strongly recommend that you contact us at fire@uidaho.edu to talk to an advisor who will help you develop an individualized program of study to help meet your educational needs. Note that there is an additional fee for all online courses and for some campus-based courses and that there is no additional fee for part-time non-resident students who are taking online courses.

University of Idaho Academic Certificate Requirements: Course work must not be more than five years old unless it is being used in conjunction with the completion of a graduate degree; Up to six of the required credits may consist of course work completed at another regionally accredited institution. For more information please contact us or visit the following website: www.uidaho.edu/cnr/frfs.

Graduate Programs

Graduate programs are offered in many specialization areas across five general topic areas in which FRFS faculty are conducting research:

1. Ecology and Biogeosciences of Forest and Rangeland Ecosystems: ecosystem processes/modeling, biometrics, biogeochemistry, hydrology and ecohydrology, remote sensing and geospatial ecology, landscape ecology, community ecology, population ecology, ecosystem ecology, disturbance ecology, paleoecology, restoration ecology, ecophysiology, global environmental change, conservation biology/genetics, and molecular plant systematic;
2. Forest Sciences and Management: forest mensuration, forest egeneration, forest ecosystem management, tree physiology, forest pathology, forest policy, forest operations, silviculture, forest ecology, and forest genetics;
3. Renewable Materials: procurement of timber and other renewable materials; production management, marketing and distribution of bio-based products; green building materials selection, construction and design; and bio-based energy production systems;
4. Fire Sciences and Management: fire effects and recovery, fire behavior, fuels management, biophysical controls of fire and fire regimes, air quality and smoke management, fire history, and fire ecology; and
5. Rangeland Sciences and Management: grazing behavior and management, invasive plant management, livestock-wildlife relations, rangeland and habitat management, rangeland riparian management, and rangeland ecology.

Admission to the graduate program is based on: evidence of ability to complete graduate-level work as discerned from undergraduate transcripts, the applicant's statement of career objectives, and letters of recommendation; the compatibility of the student's educational and career objectives with faculty expertise and departmental objectives; and availability of graduate faculty to act as major advisor for an applicant. The GRE is required. An undergraduate degree related to our programs is also recommended but an applicant may be accepted with the understanding that certain course deficiencies may be required by the student's advisory committee.

Students can transfer up to 12 approved credits taken as a non-degree seeking student into a MS or PhD program in the College of Natural Resources with permission of the departmental graduate committee. Students who are considering transferring non-degree credits into a CNR graduate program should request early advising from the appropriate department.

Further information can be obtained from the department head (208-885-7952).

Majors

- Forestry (B.S.Forestry) (p. 319)
- Fire Ecology and Management (B.S.Fire.Ecol.Mgmt.) (p. 316)
- Rangeland Conservation (B.S.Rangeland.Consv.) (p. 319)
- Renewable Materials (B.S.Renew.Mat.) (p. 320)

- Ecology and Conservation Biology (B.S.Ecol.Cons.Biol.) - For information on an undergraduate major in ecology and conservation biology, see the Natural Resources (p. 301) section.

Minors

- Ecology Minor (p. 316)
- Fire Ecology and Management Minor (p. 317)
- Forest Operations Minor (p. 317)
- Forest Resources Minor (p. 318)
- Rangeland Ecology and Management Minor (p. 320)
- Renewable Materials Minor (p. 321)

Certificates

- Restoration Ecology Undergraduate Academic Certificate (p. 321)

Forest, Rangeland, and Fire Sciences Graduate Program

- Forest, Rangeland, and Fire Science (M.S.) (p. 318)
- Forest, Rangeland, and Fire Science (Ph.D.) (p. 318)
- Fire Ecology, Management and Technology Graduate Academic Certificate (p. 317)

Ecology Minor

Code	Title	Hours
BIOL 314	Ecology and Population Biology	3-4
or FOR 221	Principles of Ecology	
FOR 429	Landscape Ecology	3
GEOG 430	Climate Change Ecology	3
Select 9 credits from the following:		9
BIOL 416	Plant Diversity and Evolution	
FISH 314	Fish Ecology	
FISH 415	Limnology	
FISH 430	Riparian Ecology and Management	
FOR 326	Fire Ecology and Management	
FOR 330	Forest Soil and Canopy Processes	
FOR 447	Woody Plant Physiology	
GEOG 410	Biogeography	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 448	Fish and Wildlife Population Ecology	
Total Hours		18-19

Courses to total 18 credits for this minor

Fire Ecology and Management (B.S.Fire.Ecol.Mgmt.)

Students pursuing a B.S. degree in fire ecology and management must receive a grade of C or better in the following indicator courses to register for upper-division courses in the fire core and to graduate with a B.S.Fire.Ecol.Mgmt.:

Fire Core

Code	Title	Hours
MATH 143	College Algebra	3
STAT 251	Statistical Methods	3
REM 144	Wildland Fire Management	3
FOR/REM 221	Principles of Ecology	3
FOR 274	Forest Measurement and Inventory	3

Students must also have a minimum cumulative grade-point average of 2.00 in Forest Resource and Rangeland Ecology and Management courses to qualify for the B.S. degree in Fire Ecology and Management.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ECON 202	Principles of Microeconomics	3
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
FOR 274	Forest Measurement and Inventory	3
FOR 326	Fire Ecology and Management	3
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
FOR 427	Prescribed Burning Lab	3
FOR 433	Fire and Fuel Modeling	2
FOR 435	Remote Sensing of Fire	3
or REM 429	Landscape Ecology	
FOR 450	Fire Behavior	2
FOR 484	Forest Policy and Administration	2
MATH 143	College Algebra	3-4
or MATH 160	Survey of Calculus	
NR 101	Exploring Natural Resources	2
NRS 383	Natural Resource and Ecosystem Service Economics	3
PHYS 100	Fundamentals of Physics	3
PHYS 100L	Fundamentals of Physics Lab	1
PLSC 205	General Botany	4
REM 144	Wildland Fire Management	3
REM 407	GIS Application in Fire Ecology and Management	2
REM 459	Rangeland Ecology	2
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Select one of the following:		3-4
FOR 330	Forest Soil and Canopy Processes	
FOR 424	Silviculture Principles and Practices	
REM 456	Integrated Rangeland Management	
Select one of the following:		4
BIOL 114	Organisms and Environments	
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	
Select one of the following:		4

CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
FOR 454	Air Quality, Pollution, and Smoke	
GEOG 301	Meteorology	
GEOG 313	Global Climate Change	
Select one of the following:		3-4
FOR 220	Forest Biology & Dendrology	
REM 252	Wildland Plant Identification	
REM 341	Systematic Botany	
Advisor Approved Electives or Approved Minor		15-21
Rangeland Ecology and Management (p. 320)		
Forest Resources (p. 318)		
Natural Resource Conservation (p. 330)		
Natural Resources Economics (p. 115)		
Fishery Resources (p. 312)		
Wildlife Resources (p. 313)		
Ecology (p. 316)		
Forest Operations (p. 317)		
Renewable Materials (p. 321)		
Total Hours		95-104

Courses to total 120 credits for this degree

Fire Ecology and Management Minor

Code	Title	Hours
FOR 326	Fire Ecology and Management	3
REM 144	Wildland Fire Management	3
Select one of the following:		2-3
FOR 427	Prescribed Burning Lab	
FOR 433	Fire and Fuel Modeling	
FOR 450	Fire Behavior	
Select one Ecology course from the following:		2-4
FOR 330	Forest Soil and Canopy Processes	
REM 429	Landscape Ecology	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
REM 460	Integrating GIS and Field Studies in Rangelands	
WLF 314	Ecology of Terrestrial Vertebrates	
Select one Applied Tools and Technology course from the following:		3
FOR 435	Remote Sensing of Fire	
GEOG 301	Meteorology	
GEOG 385	GIS Primer	
GEOG 401	Climatology	
GEOG 475	Intermediate GIS	
Select two Management, Planning, and Policy courses from the following:		6
FOR 324	Forest Regeneration	
FOR 424	Silviculture Principles and Practices	
FOR 430	Forest Operations	
FOR 462	Watershed Science and Management	
FOR 484	Forest Policy and Administration	
NRS 490	Wilderness and Protected Area Management	
REM 456	Integrated Rangeland Management	
Total Hours		19-22

Courses to total 20 credits for this minor, with at least 12 credits in courses numbered 400 or above.

Fire Ecology, Management and Technology Graduate Academic Certificate

Note: A grade of 'B' or higher is required in all coursework for this academic certificate.

Code	Title	Hours
FOR 526	Fire Ecology	3
FOR 546	Science Synthesis and Communication	3
FOR 587	Wildland Fire Policy	2
Select one Ecology and Management course from the following:		2-3
FOR 427	Prescribed Burning Lab	
FOR 451	Fuels Inventory and Management	
FOR 529	Ecosystem Analysis and Modeling	
FOR 531	Invasion Biology	
FOR 557	Advanced Fire Behavior	
REM 429	Landscape Ecology	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
REM 507	Landscape and Habitat Dynamics	
Select one Tools and Technology course from the following:		2-4
FOR 435	Remote Sensing of Fire	
or FOR 535	Remote Sensing of Fire	
FOR 472	Remote Sensing of the Environment	
REM 407	GIS Application in Fire Ecology and Management	
or REM 510	GIS Application in Fire Ecology and Management	
Select one Planning and Policy course from the following:		3
FOR 454	Air Quality, Pollution, and Smoke	
FOR 554	Air Quality, Pollution, and Smoke	
FOR 584	Natural Resource Policy Development	
REM 456	Integrated Rangeland Management	
Total Hours		15-18

Electives to total 15 for the certificate

Forest Operations Minor

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
FOR 430	Forest Operations	3
FOR 431	Low Volume Forest Roads	2
FOR 436	Cable Systems	2
RMAT 100	Intro to Renewable Resources	2
RMAT 321	Properties of Renewable Materials	3

RMAT 444	Primary Products Manufacturing	3
Total Hours		18

Courses to total 18 credits for this minor

Forest Resources Minor

Code	Title	Hours
Select 18 credits from the following courses:		18
FOR 220	Forest Biology & Dendrology	
FOR 275	Forestry Resource Sampling	
FOR 274	Forest Measurement and Inventory	
FOR 324	Forest Regeneration	
FOR 326	Fire Ecology and Management	
FOR 330	Forest Soil and Canopy Processes	
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	
FOR 424	Silviculture Principles and Practices	
FOR 430	Forest Operations	
FOR 462	Watershed Science and Management	
FOR 468	Forest and Plant Pathology	
Total Hours		18

Courses to total 18 credits for this minor

Forest, Rangeland, and Fire Science (Ph.D.)

Candidates must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. Graduate programs are offered in many forest and rangeland specialization areas including Ecology and Biogeosciences of Forest and Rangeland Ecosystems: ecosystem processes/modeling, biometrics, biogeochemistry, hydrology and ecohydrology, remote sensing and geospatial ecology, landscape ecology, community ecology, population ecology, ecosystem ecology, disturbance ecology, paleoecology, restoration ecology, ecophysiology, global environmental change, conservation biology/genetics, and molecular plant systematic; Forest Sciences and Management: forest mensuration, forest regeneration, forest ecosystem management, tree physiology, forest pathology, forest policy, forest operations, silviculture, forest ecology, and forest genetics; Fire Sciences and Management: fire effects and recovery, fire behavior, fuels management, biophysical controls of fire and fire regimes, air quality and smoke management, fire history, and fire ecology; Rangeland Sciences and Management: grazing behavior and management, invasive plant management, livestock-wildlife relations, rangeland and habitat management, rangeland riparian management, and rangeland ecology.

Admission to the graduate program is based on: evidence of ability to complete graduate-level work as discerned from undergraduate transcripts, the applicant's statement of career objectives, and letters of recommendation; the compatibility of the student's educational and career objectives with faculty expertise and departmental objectives; and availability of graduate faculty to act as major advisor for an applicant. The GRE is required. An undergraduate degree related to our programs is also recommended but an applicant may be accepted with the understanding that certain course deficiencies may be required by the student's advisory committee.

Students can transfer up to 12 approved credits taken as a non-degree seeking student into a MS or PhD program in the College of Natural Resources with permission of the departmental graduate committee. Students who are considering transferring non-degree credits into a CNR graduate program should request early advising from the appropriate department.

Doctor of Philosophy. Major in Natural Resources.

The Ph.D. degree is available with a major in natural resources. General Ph.D. requirements apply; see the NR (p. 321) section for details.

Forest, Rangeland, and Fire Sciences (M.S.)

Candidates must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. Graduate programs are offered in many forest and rangeland specialization areas including Ecology and Biogeosciences of Forest and Rangeland Ecosystems: ecosystem processes/modeling, biometrics, biogeochemistry, hydrology and ecohydrology, remote sensing and geospatial ecology, landscape ecology, community ecology, population ecology, ecosystem ecology, disturbance ecology, paleoecology, restoration ecology, ecophysiology, global environmental change, conservation biology/genetics, and molecular plant systematic; Forest Sciences and Management: forest mensuration, forest regeneration, forest ecosystem management, tree physiology, forest pathology, forest policy, forest operations, silviculture, forest ecology, and forest genetics; Fire Sciences and Management: fire effects and recovery, fire behavior, fuels management, biophysical controls of fire and fire regimes, air quality and smoke management, fire history, and fire ecology; Rangeland Sciences and Management: grazing behavior and management, invasive plant management, livestock-wildlife relations, rangeland and habitat management, rangeland riparian management, and rangeland ecology.

Admission to the graduate program is based on: evidence of ability to complete graduate-level work as discerned from undergraduate transcripts, the applicant's statement of career objectives, and letters of recommendation; the compatibility of the student's educational and career objectives with faculty expertise and departmental objectives; and availability of graduate faculty to act as major advisor for an applicant. The GRE is required. An undergraduate degree related to our programs is also recommended but an applicant may be accepted with the understanding that certain course deficiencies may be required by the student's advisory committee.

Students can transfer up to 12 approved credits taken as a non-degree seeking student into a MS or PhD program in the College of Natural Resources with permission of the departmental graduate committee. Students who are considering transferring non-degree credits into a CNR graduate program should request early advising from the appropriate department.

Master of Science. Major in Natural Resources.

The M.S. degree is available with a major in natural resources. Thesis and non-thesis options are offered.

1. Thesis option: General M.S. requirements apply. However, the thesis may be comprised of a manuscript(s) in a form acceptable for

publication in a refereed journal, while otherwise fulfilling format requirements of the Graduate College.

2. Non-thesis option: General M.S. requirements apply. A written and/or oral examination that covers graduate course work must be taken during the final semester in residence. At least one professional paper is required and will be evaluated by the candidate's supervisory committee.

Forestry (B.S.Forestry)

Students must have a minimum cumulative grade-point average of 2.00 in forestry (FOR) courses to qualify for the B.S. degree in forestry.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
ECON 202	Principles of Microeconomics	3
ENT 469	Introduction to Forest Insects	2
FOR 102	Introduction to Forest Management	2
FOR 220	Forest Biology & Dendrology	3
FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
FOR 275	Forestry Resource Sampling	2
FOR 274	Forest Measurement and Inventory	3
FOR 324	Forest Regeneration	3
FOR 330	Forest Soil and Canopy Processes	4
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
FOR 424	Silviculture Principles and Practices	4
FOR 430	Forest Operations	3
FOR 462	Watershed Science and Management	3
FOR 468	Forest and Plant Pathology	2
FOR 484	Forest Policy and Administration	2
FOR 493	Business of Forestry	2
MATH 143	College Algebra [1]	3
MATH 144	Analytic Trigonometry [1]	1
NR 101	Exploring Natural Resources	2
NRS 383	Natural Resource and Ecosystem Service Economics	3
REM 144	Wildland Fire Management	3
or FOR 326	Fire Ecology and Management	
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	

Advisor Approved Electives or Minor

Select 13 credits of advisor approved Electives OR one of the following minors:	13-22
Business (p. 161)	
Ecology (p. 316)	
Environmental Communication (p. 327)	
Fire Ecology and Management (p. 317)	
Fishery Resourses (p. 312)	
Forest Operations (p. 317)	
Horticulture (p. 133)	
Natural Resource Conservation (p. 330)	
Natural Resources Economics (p. 115)	
Renewable Materials (p. 321)	
Rangeland Ecology and Management (p. 320)	
Soil Science (p. 136)	
Wildlife Resources (p. 313)	
Total Hours	91-100

Courses to total 120 credits for this degree

[1] A SAT math score of 610 or above, or ACT math score of 27 or above can be used to satisfy the MATH 143 and MATH 144 requirements.

Rangeland Conservation (B.S.Rangeland.Consv.)

This major prepares students to conserve, restore, and manage the vast landscapes known as rangelands. These ecosystems include deserts, prairies, shrublands, and woodlands. The degree program focuses on the scientific study of rangelands and introduces principles for managing and restoring rangelands for maximum benefit and ecosystem sustainability.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
First and Second Years		
AVS 109	The Science of Animals that Serve Humanity	3-4
or AVS 110	Science of Animal Husbandry	
BIOL 114	Organisms and Environments	4
BIOL 213	Principles of Biological Structure and Function	4
or PLSC 205	General Botany	
COMM 101	Fundamentals of Oral Communication	2
ECON 202	Principles of Microeconomics	3
FOR 221	Principles of Ecology	3
or NR 321	Ecology	
FOR 235	Society and Natural Resources	3
MATH 143	College Algebra	3-4
or MATH 160	Survey of Calculus	
NR 101	Exploring Natural Resources	2
REM 151	Rangeland Principles	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
REM 252	Wildland Plant Identification	2

REM 253	Wildland Plant Identification Field Studies	1
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Third and Fourth Years		
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
FISH 430	Riparian Ecology and Management	3
or FOR 462	Watershed Science and Management	
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
REM 341	Systematic Botany	3
REM 410	Principles of Vegetation Monitoring and Measurement	2
REM 411	Wildland Habitat Ecology and Assessment	2
REM 456	Integrated Rangeland Management	3
REM 459	Rangeland Ecology	2
REM 460	Integrating GIS and Field Studies in Rangelands	2
SOIL 454	Pedology	3
Select one of the following:		3-4
REM 280 & PLSC 419	Introduction to Wildland Restoration and Plant Community Restoration Methods	
REM 440	Restoration Ecology	
Career Tracks with Advisor Input and Approval		15
Total Hours		91-94

Students must also complete 15 credits of advisors approved electives contributing to a specific career track that may include:

RESTORATION ECOLOGY - Millions of acres of rangeland and forests have been disturbed by fire, invasive plants, and overgrazing. Academic advisors in rangeland conservation have developed a set of electives for students interested in a career in wildland restoration. Completing these career track electives will fulfill requirements for the Restoration Ecology Undergraduate Academic Certificate. Careful selection of courses can also highlight expertise in botany and plant materials to qualify for professions as a botanist.

WILDLIFE HABITAT - Many species of wildlife live on rangelands and the management of wildlife habitat is an important and sought after skill. With help from their Academic Advisor, rangeland students can complete a career track that will show expertise in wildlife habitat management and fulfill the requirements for a Minor in Wildlife Resources.

LAND AND LIVESTOCK - This career track is for students interested in "hands-on" management of rangelands. Academic Advisors work with students to select courses that provide the knowledge and skills needed to manage rangelands with grazing and fire to enhance livestock production while sustaining communities of native plants and animals. Completion of these courses can also satisfy the requirements for a Minor in Animal Science or Soil Science.

WILDLAND FIRE - Wildfire is one of the major forces causing change on rangeland ecosystems. Completing a specific set of advisor approved electives, will enable students to show knowledge of land management related to wildland fire and fulfill the requirements for a Minor in Fire Ecology and Management.

INDIVIDUAL INTEREST – Students can work with their advisor to select specific courses to show expertise in a career track of specific interest that may include Watershed or Riparian Ecologist, Natural Resource GIS Specialist, Environmental Consultant, Tribal Land Manager, Resource Economist, or many other interests related to rangelands.

Courses to total 122 credits for this degree

Rangeland Ecology and Management Minor

Code	Title	Hours
REM 151	Rangeland Principles	3
REM 252	Wildland Plant Identification	2
or REM 341	Systematic Botany	
REM 456	Integrated Rangeland Management	3
REM 459	Rangeland Ecology	2
Select 3-4 credits from the following:		3-4
REM 410	Principles of Vegetation Monitoring and Measurement	
REM 411	Wildland Habitat Ecology and Assessment	
REM 440	Restoration Ecology	
Select two courses from the following (or a course not chosen above)		5-7
AVS 474	Beef Cattle Science	
AVS 476	Sheep Science	
FISH 430	Riparian Ecology and Management	
FOR 326	Fire Ecology and Management	
FOR 462	Watershed Science and Management	
PLSC 338	Weed Control	
PLSC 410	Invasive Plant Biology	
REM 340	Ethnobotany	
REM 429	Landscape Ecology	
SOIL 438	Pesticides in the Environment	
SOIL 454	Pedology	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 440	Conservation Biology	
Total Hours		18-21

Courses to total 18 credits for this minor

Renewable Materials (B.S.Renew.Mat.)

The Renewable Materials degree program is designed to fill the growing demand for professionals in the manufacture, marketing, and utilization of sustainable natural materials. Interdisciplinary coursework and project-based learning opportunities lead to a variety of career directions, including procurement of timber and other renewable materials; production management, marketing and distribution of bio-based products; green building materials selection, construction and design; and bio-based energy production systems.

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
BLAW 265	Legal Environment of Business	3
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
COMM 101	Fundamentals of Oral Communication	2
ECON 202	Principles of Microeconomics	3
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
NR 101	Exploring Natural Resources	2
NRS 383	Natural Resource and Ecosystem Service Economics	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
RMAT 100	Intro to Renewable Resources	2
RMAT 321	Properties of Renewable Materials	3
RMAT 401	Undergraduate Research	1-3
RMAT 436	Biocomposites	3
RMAT 438	Introduction to Lignocellulosic Chemistry	1
RMAT 444	Primary Products Manufacturing	3
RMAT 450	Biomaterials Deterioration and Protection	2
RMAT 491	Biomaterial Product and Process Development Lab	2
RMAT/MKTG 495	Product Development and Brand Management	3
RMAT 498	Renewable Natural Resources Internship	1-16
STAT 251	Statistical Methods	3
Select one of the following:		
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Second major, academic minor, or area of Emphasis [1]		18
Total Hours		88-105

Courses to total 120 credits for this degree

[1] Degree candidates are required to complete a second major, an academic minor or area of emphasis of at least 18 credits. The emphasis area must be approved by the student's academic advisor.

Renewable Materials Minor

For students in business, engineering, forestry, or vocational education who wish to gain specific background and knowledge related to the forest products industry.

Code	Title	Hours
FOR 430	Forest Operations	3
RMAT 321	Properties of Renewable Materials	3
RMAT 444	Primary Products Manufacturing	3
Select 9 credits of electives in Renewable Materials		9
Total Hours		18

Courses to total 18 credits for this minor

Restoration Ecology Undergraduate Academic Certificate

Code	Title	Hours
REM 221	Principles of Ecology	3
or NR 321	Ecology	
REM 280	Introduction to Wildland Restoration	2
REM 440	Restoration Ecology	3
REM 459	Rangeland Ecology	2
SOIL 205	The Soil Ecosystem	3
Select one of the following:		3
FOR 324	Forest Regeneration	
FOR 326	Fire Ecology and Management	
LARC 480	The Resilient Landscape	
PLSC 338	Weed Control	
PLSC 410	Invasive Plant Biology	
PLSC 419	Plant Community Restoration Methods	
REM 429	Landscape Ecology	
SOIL 438	Pesticides in the Environment	
SOIL 454	Pedology	
WLF 440	Conservation Biology	
Total Hours		16

Courses to total 16 credits for this certificate

Department of Natural Resources

Dennis Becker, Dean; Steven R. Shook, Associate Dean; (202 College of Natural Resources Bldg.; 208-885-6442).

With approximately 90 percent of its area in forest and range lands, together with its wealth of water resources, Idaho offers excellent opportunities for undergraduate and graduate study in all the disciplines related to management of renewable resources of wildlands. The college has its own research organization, the Forest, Wildlife and Range Experiment Station, including the Idaho Cooperative Fish and Wildlife Research Unit and the Cooperative Park Studies Unit. All faculty members have teaching responsibilities in the college as well as research responsibilities in the experiment station. Additional facilities include the Taylor Wilderness Research Station, in the Frank Church River of No Return Wilderness Area, the Experimental Forest near Moscow, the Lee A. Sharp Experimental Area near Burley, Idaho, the McCall Field Campus in

central Idaho, and the USDA Rocky Mountain Research Station, Forestry Sciences Laboratory, in Moscow.

Admission for graduate study normally requires completion of course work equivalent to that required in one of the undergraduate curricula offered by the college. Students with differing backgrounds but substantial preparation in the sciences may also be admitted. The study plans developed will allow for differences in preparation while providing all students with comparable backgrounds by the time the graduate program is completed.

Majors

- Ecology and Conservation Biology (B.S.Ecol.Cons.Biol.) (p. 322)

Minors

- Natural Resources Minor (p. 326)

Natural Resources Graduate Program

Candidate must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Natural Resources (M.S.) (p. 326)
- Natural Resources (M.N.R.) (p. 324)
- Natural Resources (Ph.D.) (p. 326)

Ecology and Conservation Biology (B.S.Ecol.Cons.Biol.)

Improving global environmental conditions requires researchers and other citizens who can understand ecological principles, who can analyze and interpret ecological conditions, and who can predict the consequences of alternative natural resource management decisions. Understanding the importance of social values and policy for ecology and management of rare, threatened, and endangered species and their habitat is necessary to reverse the order of their decline. In the ecology and conservation biology program, students learn to apply biological, ecological, social, and political understanding to solve problems related to long-term conservation of biological diversity and to sustainable management of ecosystems.

This degree combines the biological, ecological, and social sciences to provide

1. an interdisciplinary understanding of the composition, structure, and processes of ecosystems, and
2. the skills necessary to provide long-term planning for the conservation and sustainable management of populations, species, and ecosystems.

Students will examine topics from molecular to landscape scales and integrate the social and biophysical worlds. Graduates will be equipped to address the issues and problems of sustainable resource use, conservation of rare, threatened, or endangered biota, management of ecosystems, and long-term conservation of biological diversity. This program is flexible enough to adapt to the interests of individual students, while remaining firmly grounded in ecological principles applicable to species, populations, communities, landscapes, and ecosystems. It is distinctly different from the emphasis on management in the other forestry, wildlife, fisheries, range, and conservation social sciences programs, or the more general environmental science programs. Graduates of the program often continue advanced studies at national and international universities. This natural resources "liberal science" degree can also serve as pre-professional training for law school, or for professional positions in federal, state, and private environmental organizations including local and regional planning groups and consulting firms.

The program requires 120 credits, and students must choose either the natural resources ecology or conservation biology option. Students pursuing a B.S. in Ecology & Conservation Biology must receive a grade of 'C' or better in each of the following 4 indicator courses to register in upper division courses in NRS/FISH/FOR/REM/WLF and to graduate with a B.S. in either option: BIOL 114, BIOL 213, STAT 251, FOR 221, WLF 220 or NR 321. Before students are allowed to begin their senior thesis or project (485 or 497), they must attend two evening thesis / project sessions and one senior poster presentation.

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Principles of Biological Structure and Function	4
COMM 101	Fundamentals of Oral Communication	2
ECON 202	Principles of Microeconomics	3-4
or ECON 272	Foundations of Economic Analysis	
ENGL 317	Technical Writing	3
or WLF 370	Management and Communication of Scientific Data	
FOR 220	Forest Biology & Dendrology	3
or REM 341	Systematic Botany	
FOR 235	Society and Natural Resources	3
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
NR 101	Exploring Natural Resources	2
NR 200	Seminar	1-16
NR 300	Ecology and Conservation Biology Thesis Seminar	1
NRS 383	Natural Resource and Ecosystem Service Economics	3
STAT 251	Statistical Methods	3
Select one of the following:		3-4
BIOL 314	Ecology and Population Biology	
FOR/REM 221/WLF 220	Principles of Ecology	
NR 321	Ecology	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		1
FISH 473	ECB Senior Presentation	

FOR 473	ECB Senior Presentation	
NRS 473	ECB Senior Presentation	
REM 473	ECB Senior Presentation	
RMAT 473	ECB Senior Presentation	
WLF 473	ECB Senior Presentation	
Select one of the following:		3
FISH 497	Senior Thesis (Max 6 credits)	
FOR 497	Senior Thesis (Max 98 credits)	
NR 497	Senior Thesis (Max 3 credits)	
REM 497	Senior Research and Thesis	
WLF 497	Senior Thesis (Max 6 credits)	
Options		
Select one of the following options:		36-43
Natural Resources Ecology (p. 323)		
Conservation Biology (p. 323)		
Total Hours		90-114

A. Natural Resources Ecology Option

The natural resources ecology option combines ecological theory, field experience, and quantitative tools to gain an interdisciplinary understanding of the structure and function of ecosystems. This field covers ecological topics from local, regional, and landscape scales while integrating the social and biophysical worlds.

To graduate in this option, students must achieve a "C" or better in the following six core courses: NR 200, FOR 330, REM 429, SOIL 205/SOIL 206, and WLF 448.

Code	Title	Hours
FOR 330	Forest Soil and Canopy Processes	4
REM 429	Landscape Ecology	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
WLF 448	Fish and Wildlife Population Ecology	4
Select one of the following:		4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
Select one Quantitative Resource Analysis Restricted elective from the following:		2-4
FOR 472	Remote Sensing of the Environment	
GEOG 385	GIS Primer	
NRS 310	Social Science Methods	
REM 410	Principles of Vegetation Monitoring and Measurement [1]	
REM 411	Wildland Habitat Ecology and Assessment [1]	
STAT 431	Statistical Analysis	
STAT 422	Sample Survey Methods	
WLF 411	Wildland Habitat Ecology and Assessment	
Select one Resource Management Restricted elective from the following:		3-4
FISH 418	Fisheries Management	
FOR 424	Silviculture Principles and Practices	
FOR 462	Watershed Science and Management	
NRS 386	Social-Ecological Systems	
NRS 490	Wilderness and Protected Area Management	
NRS 496	Monitoring Impacts in Protected Areas and Wilderness	
REM 456	Integrated Rangeland Management	
WLF 492	Wildlife Management	
Select 10 credits of Ecology Restricted electives from the following: [2]		10
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 478	Animal Behavior	
ENT 469	Introduction to Forest Insects	
FISH 314	Fish Ecology	
FISH 315	Fish Ecology Field Techniques and Methods	
FISH 415	Limnology	
FISH 430	Riparian Ecology and Management	
FOR 326	Fire Ecology and Management	
FOR 468	Forest and Plant Pathology	
GEOG 410	Biogeography	
PLSC 410	Invasive Plant Biology	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
REM 460	Integrating GIS and Field Studies in Rangelands	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 315	Techniques Laboratory	
WLF 440	Conservation Biology	
Select one Social/Political Restricted elective from the following:		2-3
COMM 410	Conflict Management	
FOR 484	Forest Policy and Administration	
GEOG 420	Land, Resources, and Environment	
HIST 424	American Environmental History	
NRS 387	Environmental Communication Skills	
NRS 462	Natural Resource Policy	
NRS 311	Public Involvement in Natural Resource Management	
NRS 493	International Land Preservation and Conservation Systems	
PHIL 452	Environmental Philosophy	
POLS 364	Politics of the Environment	
Total Hours		36-40

Courses to total 120 credits for this degree

1. Both REM 410 and REM 411 must be completed to satisfy Quantitative Resource Analysis Restricted Elective requirement.
2. At least 2 credits from FISH 315, FISH 415, FISH 430, REM 460, and/or WLF 315

B. Conservation Biology Option

The conservation biology option is centered around a multidisciplinary curriculum that provides students with training to work in jobs aimed at conserving the earth's biodiversity. This option provides a broad-based education that covers biological diversity from the genetic level to the landscape level, and provides additional training in social sciences and management. In the words of Hunter (1996), "Conservation biology is cross-disciplinary, reaching far beyond biology into subjects such as philosophy, economics, and sociology; disciplines that are concerned

with the social environment in which we practice conservation--as well as into subjects such as law and education that determine the ways we implement conservation."

To graduate in this option, students must achieve a "C" or better in the following seven core courses: BIOL 421, NR 200, REM 429, PHIL 452, WLF 440, and WLF 448.

Code	Title	Hours
BIOL 310	Genetics	3
or GENE 314	General Genetics	
BIOL 421	Advanced Evolution/Population Dynamics	3
PHIL 452	Environmental Philosophy	3
REM 429	Landscape Ecology	3
WLF 440	Conservation Biology	3
WLF 448	Fish and Wildlife Population Ecology	4
Select one Quantitative Resource Analysis Restricted elective from the following:		2-4
FOR 472	Remote Sensing of the Environment	
GEOG 385	GIS Primer	
NRS 310	Social Science Methods	
REM 410	Principles of Vegetation Monitoring and Measurement [1]	
REM 411	Wildland Habitat Ecology and Assessment [1]	
STAT 422	Sample Survey Methods	
STAT 431	Statistical Analysis	
Select one Resource Management Restricted elective from the following:		3-4
FISH 418	Fisheries Management	
FOR 424	Silviculture Principles and Practices	
FOR 462	Watershed Science and Management	
NRS 386	Social-Ecological Systems	
NRS 490	Wilderness and Protected Area Management	
NRS 496	Monitoring Impacts in Protected Areas and Wilderness	
REM 456	Integrated Rangeland Management	
WLF 492	Wildlife Management	
Select 6 credits of Ecology Restricted electives from the following: [2]		6
BIOL 478	Animal Behavior	
ENT 469	Introduction to Forest Insects	
FISH 314	Fish Ecology	
FISH 315	Fish Ecology Field Techniques and Methods	
FISH 415	Limnology	
FISH 430	Riparian Ecology and Management	
FOR 330	Forest Soil and Canopy Processes	
FOR 326	Fire Ecology and Management	
FOR 468	Forest and Plant Pathology	
GEOG 410	Biogeography	
PLSC 410	Invasive Plant Biology	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
REM 460	Integrating GIS and Field Studies in Rangelands	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 315	Techniques Laboratory	
Select one Organismal Biology Restricted elective from the following:		3-4
BIOL 483	Mammalogy	
BIOL 489	Herpetology	
FISH 481	Ichthyology	
WLF 482	Ornithology	
Select two Social/Political Restricted electives from the following:		4-6
COMM 410	Conflict Management	
ENVS 225	International Environmental Issues Seminar	
FOR 484	Forest Policy and Administration	
GEOG 420	Land, Resources, and Environment	
HIST 424	American Environmental History	
NRS 386	Social-Ecological Systems	
NRS 387	Environmental Communication Skills	
NRS 462	Natural Resource Policy	
NRS 311	Public Involvement in Natural Resource Management	
POLS 364	Politics of the Environment	
Total Hours		37-43

1 Both REM 410 and REM 411 must be completed to satisfy Quantitative Resource Analysis Restricted Elective requirement.

2 At least 2 credits from FISH 315, FISH 415, FISH 430, REM 460, and/or WLF 315

Courses to total 120 credits for this degree

Natural Resources (M.N.R.)

Master of Natural Resources. Major in Natural Resources. Integrated Natural Resources Option.

The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for current and aspiring professionals who wish to enhance their educational credentials for a career in natural resources. The fundamental objective of the MNR graduate program is to integrate and scale various perspectives – ecology; planning, policy and society; and tools and technology – into a systems view of natural resources. This unique professional degree is accessible to students of diverse academic backgrounds and will help graduates develop credentials and skills for the effective management of natural resources. The degree program can be completed entirely online or through a combination of online and on-campus courses. The MNR program can be combined with the certificate program specializing in fire ecology, management, and technology.

The Integrated Natural Resources Option of MNR covers a breadth of natural resource science and management subjects. The program provides knowledge and skills to support holistic, integrated approaches to careers in natural resources. The Integrated Natural Resources Option of the MNR cosists of 30 semester credits (at least 7 credits from each of three MNR program categories - Ecology and Management; Policy, Planning, and Society; and Tools and Technolgy - plus 7 elective courses and 2 credits for a final project). Up to 12 semester credits can be transferred into the program from other institutions. Coursework must include a minimum of 18 credits numbered 500 or above.

Admission to the College of Graduate Studies requires a minimum grade point average (GPA) of 3.0, three letters of reference, and a statement of purpose.

Complete admission and degree information is available online at: http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources.

Code	Title	Hours
Select a minimum of 7 credits from each of the four categories below:		21
Ecology and Management:		
BE 450	Environmental Hydrology	
FISH 515	Large River Fisheries	
FISH 525	Aquaculture in Relation to Wild Fish Populations	
FISH 540	Wetland Restoration	
FOR 526	Fire Ecology	
REM 440	Restoration Ecology	
REM 456	Integrated Rangeland Management	
REM 459	Rangeland Ecology	
REM 507	Landscape and Habitat Dynamics [1]	
REM 560	Ecophysiology	
WLF 440	Conservation Biology	
Policy, Planning, and Society:		
NRS 572	Human Dimensions of Restoration Ecology	
ENVS 536	Principles of Sustainability	
ENVS 552	Environmental Philosophy	
FOR 546	Science Synthesis and Communication	
FOR 554	Air Quality, Pollution, and Smoke [2]	
FOR 584	Natural Resource Policy Development	
FOR 587	Wildland Fire Policy	
NR 507	Moral Reasoning in Natural Resources	
NRS 574	Environmental Politics and Policy	
NRS 580	Restoration Ecology Practicum	
Tools and Technology:		
FOR 451	Fuels Inventory and Management	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
NR 525	Scientific Graphics Design	
NRS 580	Restoration Ecology Practicum	
NRS 592	Emerging Media Outreach in Natural Resources	
REM 407/510	GIS Application in Fire Ecology and Management	
REM 410	Principles of Vegetation Monitoring and Measurement	
WLF 540	Conservation Genetics	
WLF 561	Landscape Genetics	
Elective Courses		7
Eliectives or additional courses from the categories above		
Final Project		2
NR 599	Research	
Total Hours		30

Courses to total 30 credits for this degree

1 REM 507 Landscape and Habitat Dynamics can be used to contribute to either the Ecology and Management requriement -OR- the Tools and Technology requirement (but not both).

2 FOR 554 Air Quality, Pollution, and Smoke can be used to contribute to either the Policy, Planning, and Socieyt requirement -OR- the Tools and Technology requirement (but not both).

Master of Natural Resources. Major in Natural Resources. Environmental Education and Science Communication Option

Code	Title	Hours
NRS 501	Seminar: Contemporary Issues in Society and Natural Resources	2
Ecology and Management		*8*
NRS 560	Place-based Ecology I	
NRS 566	Place-based Ecology II	
Human Dimensions		*6*
NRS 565	Science Communication and the Environment	
NRS 575	Leadership for the Environmental Educator	
Policy Planning and Law		*6*
NRS 563	Place Based Env. Education	
NRS 568	Environmental Education Teaching Practicum II	
Tools and Technology		*6*
NRS 562	Field Science Teaching	
NRS 564	Teaching Environmental Education in a Winter Environment	
NRS 567	Environmental Education Teaching Practicum I	
Case Study Project		*3*
NRS 502	Directed Study	
NRS 599	Research	
Select 3 credits from the following:		3
NRS 504	Special Topics	
NRS 569	Environmental Education Teaching Practicum III	
Total Hours		34

Courses for this option to total 34 credits

Master of Natural Resources. Major in Natural Resources. Fire Ecology and Management Option.

The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for current and aspiring professionals who wish to enhance their educational credentials for a career in natural resources. The fundamental objective of the MNR graduate program is to integrate and scale various perspectives – ecology; planning, poligy and society; and tools and technology – into a systems view of natural resources. This unique professional degree is accessible to students of diverse academic backgrounds and will help graduates develop credentials and skills for the effective management of natural resources. The degree program can be completed entirely online or through a combination of online and on-campus courses. The MNR program can be combined witht he certificate program specializing in fire science.

The Fire Ecology and Management Option provides depth to address wildfire management challenges facing society. Completing this option will help students advance their professional careers in wildland fire management, fuels management, and restoration by advancing knowledge of fire science, ecology, fire-related policy and social issues, and the latest tools and technology. The Option also reinforces fundamentals in applied ecology, natural resources management, communications, an other career-advancing knowledge and skills.

The Fire Ecology and Management Option of MNR cosists of 30 semester credits (14 credits of Core Courses; 2-3 credits of Ecology; 4 credits of Tools and Technology; 6 credits of Policy, Planning, and Society; with 2 credits of non-thesis research for a final project). Up to 12 semester credits can be transferred into the program from other institutions. Admission to the College of Graduate Studies requires a minimum grade point average (GPA) of 3.0, three letters of reference, and a statement of purpose. Coursework must include a minimum of 18 credits numbered 500 or above.

Complete admissions and degree information is available online at: http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources.

Code	Title	Hours
Fire Science and Management Core		*14*
FOR 451	Fuels Inventory and Management	
FOR 526	Fire Ecology	
FOR 546	Science Synthesis and Communication	
FOR 557	Advanced Fire Behavior	
FOR 587	Wildland Fire Policy	
FOR 599	Research	
Ecology and Management		*2-3*
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
REM 507	Landscape and Habitat Dynamics [1]	
Tools and Technology		*4*
REM 407	GIS Application in Fire Ecology and Management	
REM 410	Principles of Vegetation Monitoring and Measurement	
REM 411	Wildland Habitat Ecology and Assessment	
REM 510	GIS Application in Fire Ecology and Management	
Policy, Planning, and Society		*6*
NRS 573	Planning & Decision Making for Watershed Management	
FOR 454	Air Quality, Pollution, and Smoke [2]	
FOR 554	Air Quality, Pollution, and Smoke [2]	
FOR 584	Natural Resource Policy Development	
ENVS 536	Principles of Sustainability	
NR 507	Moral Reasoning in Natural Resources	
Final Project		*2*
NR 599	Research	
Electives		*2*
Additional elective graduate courses to total a minimum of 30 credits		
Total Hours		30-31

Courses to total 30 credits for this degree

1 REM 507 Landscape and Habitat Dynamics can be used for either the Ecology and Management requirement -OR- the Tools and Technogy requirement (but not both).

2 FOR 554 Air Quality, Pollution, and Smoke can be used to contribute to either the Poligy, Planning and Society requriement -OR- the Tools and Technolgy requirement (but not both).

Natural Resources (M.S.)

Master of Science. Major in Natural Resources.

Thesis and non-thesis options are offered with a major in natural resources. See the respective departmental sections for details.

Natural Resources (Ph.D.)

Doctor of Philosophy. Major in Natural Resources.

General Ph.D. requirements apply. Doctoral candidates are required to have an understanding of the principles of resource management in areas other than that chosen as a specialization. There is no general college requirement of proficiency in a foreign language for the doctorate, but one may be required by an individual student's committee where this seems desirable.

There is only one major for the Ph.D. degree, "natural resources". However, dissertation topics are selected from disciplinary areas within each department. The single designation for the major is in keeping with the college's philosophy of integrated resource management.

Natural Resources Minor

Code	Title	Hours
FOR 235	Society and Natural Resources	3
FOR 221	Principles of Ecology	3
Select at least three courses from the following subjects, including at least 3 credits at the 300 level or above:		12
Fishery Resources (FISH) (p. 521)		
Forest Resources (FOR) (p. 532)		
Natural Resources (NR) (p. 635)		
Natural Resources and Society (NRS) (p. 637)		
Rangeland Ecology and Management (REM) (p. 679)		
Renewable Materials (RMAT) (p. 689)		
Wildlife Resources (WLF) (p. 713)		
Total Hours		18

Note: Not open to students pursuing a major in the College of Natural Resources.

Courses to total 18 credits for this minor

Department of Natural Resources and Society

Lee Vierling, Chair (19 CNR Bldg. 83844-1139; phone 208-885-7911; e-mail nrs@uidaho.edu; www.uidaho.edu/cnr/departments/nrs.

Undergraduate programs in the Department of Natural Resources and Society involve the study of how individuals, private, non-profit and governmental institutions determine how land and natural resources are allocated and managed. The Department prepares professionals and helps build the capacity of organizations that protect and conserve the environment. The undergraduate program prepares conservation professionals who:

1. Possess core skills relating to organizational management and leadership;
2. Are aware of social science theories, approaches, and technological applications;
3. Can apply both social theory and practice to current conservation issues;
4. Can work across disciplinary and sector boundaries with diverse stakeholders;
5. Understand and apply key concepts related to the planning and management of protected areas and working landscapes; and
6. Develop and incorporate a personal land ethic into their daily actions and relationships.

Students receive a solid educational foundation by studying natural resources and their management. These experiences are coupled with courses in the human dimensions of resource use, including a strong emphasis in sociology, psychology, geospatial sciences, political science, economics, and communication.

The Natural Resource Conservation B.S. undergraduate degree has two tracks: Conservation Science, and Conservation Planning and Management. These prepare students for employment or graduate education in the social dimensions of natural resource and environmental management. Graduates are prepared for a wide spectrum of career opportunities related to the human dimensions of conservation. Careers, however, usually begin in one of three general areas: environmental communication/education; parks, protected areas, and wilderness conservation; or land management policy and planning. Graduates find employment in private businesses; county, state, and national parks and protected areas; educational institutions; environmental non-profit organizations; and a variety of resource-management agencies such as the U.S. Forest Service, Bureau of Land Management, National Park Service, and others. Some students also pursue a second degree in ecology, environmental science, forestry, wildlife and fisheries, or range management to broaden their employability. Still others select foreign language coursework to prepare for careers in international conservation.

The department also offers thesis and non-thesis graduate programs (M.S. with a major in Natural Resources), as well as a Ph.D. These are multidisciplinary and provide students with the opportunity to combine interests in natural resource management and the social and/or biophysical sciences. In cooperation with an advisory committee, each student develops a program of studies that supports his or her educational and professional interests. Graduate courses are available in this department and in supporting areas such as forest resources, landscape ecology, anthropology, geography, education, statistics, political science, sociology, and psychology. In addition, the department is the home of the award-winning McCall Outdoor Science School (MOSS) graduate program (http://www.uidaho.edu/cnr/moss). This innovative program is housed at the UI McCall Field Campus and prepares students to become leaders in teaching and science communication to a broad array of audiences.

Admission to graduate study normally requires completion of undergraduate course work in the natural and social sciences. Applicants who have completed their undergraduate degrees in fields not closely related may be required to make up deficiencies as determined by their advisory committees. In addition to the university's application requirements, the Graduate Record Examination (or other accepted graduate examination such as GMAT or LSAT) is required for consideration of all candidates from English-speaking countries for entry into an M.S. or Ph.D. degree track (not required of students applying to the MOSS program). Admission is based on undergraduate grades, evidence of ability to complete graduate-level work, letters of recommendation, examination scores, the compatibility of the student's educational and career objectives with areas of concentration in the department, and the availability of departmental graduate faculty.

For additional information, please consult the department head (208-885-7911) or visit the department website: www.uidaho.edu/cnr/departments/nrs.

Majors

- Natural Resource Conservation (B.S.Nat.Resc.Consv.) (p. 328)

Minors

- Environmental Communication Minor (p. 327)
- Natural Resource Conservation Minor (p. 330)
- Parks, Protected Areas, and Wilderness Conservation Minor (p. 330)

Certificates

- Remote Sensing of the Environment Undergraduate Academic Certificate (p. 331)

Natural Resources and Society Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Environmental Education and Science Communication Academic Graduate Certificate (p. 328)
- Natural Resources and Society (M.S.) (p. 330)
- Natural Resources and Society (Ph.D.) (p. 330)

Environmental Communication Minor

Code	Title	Hours
JAMM 121	Media Writing	3
JAMM 252	Introduction to Integrated Media Campaigns	3
NRS 387	Environmental Communication Skills	3
NRS 311	Public Involvement in Natural Resource Management	3
NRS 487	Environmental Education	3
Select two courses from the following:		6
ART 280	Understanding Photography	
COMM 347	Persuasion	
COMM 410	Conflict Management	

COMM 431	Applied Business and Professional Communication	
JAMM 265	Principles of Advertising	
JAMM 275	Introduction to Broadcasting and Digital Media Production	
JAMM 361	Advertising Creativity	
JAMM 425	Feature Article Writing	
Total Hours		21

Courses to total 21 credits for this minor

Environmental Education and Science Communication Academic Graduate Certificate

Code	Title	Hours
Orientation Block		
NRS 562	Field Science Teaching	2
Fall Content Block		
Select two of the following courses:		6-8
NRS 560	Place-based Ecology I	
NRS 563	Place Based Env. Education	
NRS 575	Leadership for the Environmental Educator	
Winter Content Block		
NRS 564	Teaching Environmental Education in a Winter Environment	2
Spring Content Block		
NRS 565	Science Communication and the Environment	4
or NRS 566	Place-based Ecology II	
Teaching Practicum Block		
NRS 567	Environmental Education Teaching Practicum I	2
NRS 568	Environmental Education Teaching Practicum II	2
Research Block		
Select 2 credits of the following:		2
NRS 500	Master's Research and Thesis [1]	
NRS 502	Directed Study	
NRS 600	Doctoral Research and Dissertation [2]	
Total Hours		20-22

1 *NRS 500 Master's Research and Thesis only for students seeking this certificate to complement current M.S. thesis program.*

2 NRS 600 Doctoral Research and Dissertation only for students seeking this certificate to complement current Ph.D. program.

Courses to total 20 credits for this certificate

Natural Resource Conservation (B.S.Nat.Resc.Consv.)

Required Course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
ECON 202	Principles of Microeconomics	3
FOR 221	Principles of Ecology	3
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
NR 101	Exploring Natural Resources	2
NRS 125	Introduction to Conservation and Natural Resources	3
NRS 235	Society and Natural Resources	3
NRS 310	Social Science Methods	4
NRS 311	Public Involvement in Natural Resource Management	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
NRS 387	Environmental Communication Skills	3
NRS 498	Internship	1-6
STAT 251	Statistical Methods	3
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Emphases		
Select one of the following emphases:		50-72
Conservation Planning and Management (p. 328)		
Conservation Science (p. 329)		
Total Hours		87-115

A. Conservation Planning and Management Emphasis

To graduate a student must earn an average GPA 2.30 or higher in all NRS courses.

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication (or One semester of a foreign language course)	2-4
ENGL 207	Persuasive Writing	3
or ENGL 208	Personal & Exploratory Writing	
ENVS 225	International Environmental Issues Seminar	3
or IS 322	International Environmental Organizations	
NRS 364	Politics of the Environment	3
NRS 462	Natural Resource Policy	3
NRS 475	Local and Regional Environmental Planning	3
NRS 476	Environmental Project Management and Decision Making	4
POLS 101	American National Government	3
or POLS 275	American State and Local Government	
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
Select one of the following:		4
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	
Select one of the following:		3

ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
ENGL 322	Studies in Environmental Literature and Culture	
Select one of the following:		3
AGEC 477	Law, Ethics and the Environment	
ENVS 479	Introduction to Environmental Regulations	
NRS 386	Social-Ecological Systems	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
Select one of the following:		3-4
NRS/FOR 472	Remote Sensing of the Environment	
FOR 435	Remote Sensing of Fire	
NRS/REM 440	Restoration Ecology	
Select one of the following:		3-4
BIOL 314	Ecology and Population Biology	
FOR 326	Fire Ecology and Management	
NRS 450	Global Environmental Change	
REM 429	Landscape Ecology	
REM 340	Ethnobotany	
REM 459 & REM 460	Rangeland Ecology and Integrating GIS and Field Studies in Rangelands	
WLF 440	Conservation Biology	
Contract Courses [1]		12-18
Total Hours		62-72

Courses to total 120 credits for this degree

[1] Students must submit a contract for a minimum of 12 credits, completed through prior consultation and approval from the faculty advisor. Courses taken to fulfill major requirements above cannot be double counted for contract courses. All contract courses must be upper division (University of Idaho 3xx, 4xx, or 5xx level courses). Students may fulfill their contract requirement by completing a University approved minor, certificate, or approved study abroad experience. Students are encouraged to make choices that strengthen their expertise and demonstrate proficiency in an area of professional interest. See the University of Idaho General Catalog for a list of approved minors and certificates. (http://www.uidaho.edu/registrar/classes/catalogs)

B. Conservation Science Emphasis.

To graduate a student must earn an average GPA of 2.00 or higher in all courses taught in the College of Natural Resources (p. 301) and complete an approved professional work experience in natural resources.

Code	Title	Hours
NRS 364	Politics of the Environment	3
or NRS 462	Natural Resource Policy	
Select one writing course:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
Select one of the following:		3-4
NRS 475	Local and Regional Environmental Planning	
NRS 476	Environmental Project Management and Decision Making	
NRS 490	Wilderness and Protected Area Management	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		4
BIOL 114	Organisms and Environments	
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	
Natural Resource Science Restricted Electives		33
Select 33 credits of Natural Resource Science Restricted electives from the following (at least 15 credits must be at the 400-level):		
Fishery Science		
Select at least 6 credits from the following:		
FISH 314	Fish Ecology	
FISH 315	Fish Ecology Field Techniques and Methods	
FISH 415	Limnology	
FISH 418	Fisheries Management	
FISH 422	Concepts in Aquaculture	
FISH 424	Fish Health Management	
FISH 430	Riparian Ecology and Management	
Fire Ecology and Management		
Select at least 2 credits from the following:		
FOR 326	Fire Ecology and Management	
FOR 433	Fire and Fuel Modeling	
FOR 450	Fire Behavior	
FOR 454	Air Quality, Pollution, and Smoke	
Forestry and Renewable Materials		
Select at least 9 credits from the following:		
FOR 220	Forest Biology & Dendrology	
FOR 275	Forestry Resource Sampling	
FOR 324	Forest Regeneration	
FOR 330	Forest Soil and Canopy Processes	
FOR 424	Silviculture Principles and Practices	
FOR 430	Forest Operations	
FOR 431	Low Volume Forest Roads	
FOR 436	Cable Systems	
FOR 462	Watershed Science and Management	
FOR 468	Forest and Plant Pathology	
FOR 472	Remote Sensing of the Environment	
RMAT 321	Properties of Renewable Materials	
RMAT 436	Biocomposites	
RMAT 438	Introduction to Lignocellulosic Chemistry	

RMAT 444	Primary Products Manufacturing	
RMAT 450	Biomaterials Deterioration and Protection	
RMAT 491	Biomaterial Product and Process Development Lab	
RMAT/MKTG 495	Product Development and Brand Management	
Rangeland Ecology and Management		
Select at least 6 credits from the following:		
REM 341	Systematic Botany	
REM 410	Principles of Vegetation Monitoring and Measurement	
REM 411	Wildland Habitat Ecology and Assessment	
REM 440	Restoration Ecology	
REM 452	Western Wildland Landscapes	
REM 456	Integrated Rangeland Management	
REM 459	Rangeland Ecology	
REM 460	Integrating GIS and Field Studies in Rangelands	
Wildlife Science		
Select at least 6 credits from the following:		
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 315	Techniques Laboratory	
WLF 440	Conservation Biology	
WLF 448	Fish and Wildlife Population Ecology	
WLF 482	Ornithology	
WLF 492	Wildlife Management	
Total Hours		50-51

Courses to total 120 credits for this degree

Natural Resource Conservation Minor

Note: This minor may not be earned by students in an existing degree program in the Department of Natural Resources and Society.

Code	Title	Hours
NRS 125	Introduction to Conservation and Natural Resources	3
or NRS 235	Society and Natural Resources	
NRS 364	Politics of the Environment	3
or NRS 462	Natural Resource Policy	
Select 12 credits of electives from the following:		12
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 386	Social-Ecological Systems	
NRS 387	Environmental Communication Skills	
NRS 475	Local and Regional Environmental Planning	
NRS 311	Public Involvement in Natural Resource Management	
Total Hours		18

Courses to total 18 credits for this minor

Natural Resources and Society (M.S.)

Master of Science. Major in Natural Resources.

Thesis, non-thesis, and course-based options are offered.

1. Thesis programs are specifically research oriented and the student is required to conduct independent research and present the results as a thesis, which must be approved by the candidate's supervisory committee.
2. Non-thesis programs are concentrated more on course work. Though research may be conducted, the candidate is not required to present the results in a formal thesis. A final report, professional paper(s), or other terminal project agreed on in advance by the advisory committee is a normal requirement under this plan. This program lends itself to projects such as recreation master plans, regional plans, area management plans, historical reviews, and the development of professional interpretive media.
3. The course-based program is designed for practitioners with a focus on coursework that will prepare professionals for leadership careers in conservation.

For both the thesis and non-thesis options, after a research or other scholarly project is selected, the student must prepare for his or her committee a formal work plan and make an oral public presentation of the proposed project. The purpose of this requirement is to:

1. help structure and sharpen the student's thinking and approach to the project,
2. obtain the views of various knowledgeable persons that may lead to constructive modifications in the work plan,
3. gain experience in making professional presentations, and
4. increase communication within the academic community.

Natural Resources and Society (Ph.D.)

Doctor of Philosophy. Major in Natural Resources.

The Ph.D. degree is available with a major in natural resources. General Ph.D. requirements apply; see the NR (p. 326) section for details.

Parks, Protected Areas, and Wilderness Conservation Minor

Code	Title	Hours
BIOL 314	Ecology and Population Biology	4
or FOR 221	Principles of Ecology	
NRS 490	Wilderness and Protected Area Management	3
or NRS 493	International Land Preservation and Conservation Systems	
WLF 440	Conservation Biology	3
Select 11 credits from the following:		11
AIST 401	Contemporary American Indian Issues	
GEOG 420	Land, Resources, and Environment	
HIST 424	American Environmental History	

NRS 304	Consrvation Social Sciences Field Studies	
NRS 386	Social-Ecological Systems	
NRS 475	Local and Regional Environmental Planning	
NRS 490	Wilderness and Protected Area Management	
NRS 493	International Land Preservation and Conservation Systems	
NRS 496	Monitoring Impacts in Protected Areas and Wilderness	
PHIL 452	Environmental Philosophy	
Total Hours		21

Courses to total 21 credits for this minor

Remote Sensing of the Environment Undergraduate Academic Certificate

Code	Title	Hours
Requirement A		
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3
or GEOG 483	Remote Sensing/GIS Integration	
Requirement B		
FOR 435	Remote Sensing of Fire	3
FOR 472	Remote Sensing of the Environment	4
Requirement C		
Select one of the following:		2-3
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
LARC 395	GIS Applications in Land Planning 1	
REM 407	GIS Application in Fire Ecology and Management	
REM 429	Landscape Ecology	
REM 460	Integrating GIS and Field Studies in Rangelands	
Total Hours		12-13

Courses to total 12 credits for this certificate

COLLEGE OF SCIENCE

Mark J. Nielsen, Associate Dean (321 Mines Bldg; 208-885-6195, www.uidaho.edu/sci; science@uidaho.edu)

The College of Science was established in 2002. The mission of the college is to provide a superior education in the sciences, to advance knowledge through research and scholarship, and to serve the university, state and nation.

Faculty and Staff

The college has some 140 faculty and staff supporting its academic and research programs. Approximately 700 undergraduate students and 215 graduate students are enrolled in programs offered by the College of Science.

Admission to the College

Students who would like to attend the College of Science should plan their high school electives carefully to ensure that they are adequately prepared to begin their study at the college level. Students should select subjects in science and mathematics that will provide a well-rounded preparation for further study. For a statement of general undergraduate and graduate admission requirements, see the admissions (p. 42) portion of the catalog.

Facilities and Equipment

The college is housed in several buildings across campus with most of the disciplines housed in their own facility. These facilities contain teaching and research laboratories, classrooms, and faculty and administrative offices. An extensive array of analytical and other scientific equipment ensures state-of-the-art hands-on training in all aspects of the sciences.

Scholarship and Loan Funds

Students interested in scholarships should refer to the "Student Financial Aid Services (p. 77)". Individual scholarships (totaling approximately half a million dollars) are awarded each year by the College of Science. In general, there is no application process for these awards – all students majoring in the college will be considered for merit-based scholarships for which they are eligible. To be considered for need-based scholarships, students must have completed the Free Application for Federal Student Aid (FAFSA (https://fafsa.ed.gov)). The deadline for priority consideration for scholarships is February 15. Details on specific awards can be obtained by writing to: Associate Dean, College of Science, PO Box 443025, University of Idaho, Moscow, ID 83844-3025 or by sending e-mail to science@uidaho.edu.

Departments and Programs of Instruction

The college includes the departments of Biological Sciences, Chemistry, Geography, Geological Sciences, Mathematics, Physics, and Statistics. Cooperating units from other administrative divisions include the Department of Microbiology, Molecular Biology and Biochemistry in the College of Agricultural and Life Sciences, and the Department of Psychology and Communication Studies in the College of Letters, Arts and Social Sciences. Faculty from the College of Science participate in the interdisciplinary programs of Environmental Science, Neuroscience, Bioinformatics and Computational Biology, and Bioregional Planning and Community Design. The college also has affiliation with the Idaho Geological Survey.

Undergraduate Research Opportunities

The college prides itself in providing opportunities for undergraduate students to work with our faculty on research projects. We believe the best way to experience the excitement of science is through hands-on research, and that these opportunities characterize an education at a research-active university. Each year the College of Science offers fellowships to support undergraduate research projects and hosts a student research exposition at which graduate and undergraduate students display their work.

General College Requirements for Graduation

Each student working toward a baccalaureate degree from the college must satisfactorily complete 120 semester credits (unless a higher number is specified in the particular curriculum), including at least 36 credits in courses numbered 300 and above, the Core requirements (see regulation J-3 (p. 91)), and the departmental requirements for the degree sought. The departmental requirements applicable to the B.A. and B.S. degrees are listed in each department's section.

Undergraduate Programs

The College of Science offers bachelor's degrees in biology, chemistry, geography, geology, mathematics and physics. While there is not a bachelor's degree offered by the Department of Statistical Science, there is a statistics option to the mathematics bachelor's degree. See departmental sections for details.

Graduate programs

The College of Graduate Studies offers advanced degrees in many disciplines in the College of Science. A master's degree is available in bioinformatics and computational biology ;biology; chemistry; geography; geology; mathematics, physics; and statistics. The degree of Doctor of Philosophy is available in bioinformatics and computational biology; biology; chemistry; geography; geology; mathematics; and physics. Please see the list of programs offered for details.

Certificate Programs

Certificate programs are offered in Reproductive Biology (through the Department of Biological Sciences); Geographic Information Systems (through the Department of Geography); Process & Performance Excellence, and Statistics (both through the Department of Statistical Science).

Preparatory Programs in Medicine and Dentistry

Students interested in preparing for postgraduate education in health professions may, with proper advising and preparation, choose an undergraduate major in almost any field. Students are encouraged to select a major in an area that reflects their interests and aptitudes, and then simultaneously complete prerequisite coursework for admission to their graduate programs of choice. Comprehensive pre-health professions advising (http://www.uidaho.edu/sci/pre-health) and a pre-health professions studies minor (p. 356) are available to all interested students, regardless of their undergraduate major.

Teacher Education Program

Students preparing for secondary-school teaching in science can do so by completing one of the degree options in the College of Education

(see the College of Education (p. 170) section of this catalog) or also through pursuing a major within the College of Science plus additional coursework to meet certification requirements. Students interested in this second option should consult with an advisor in their chosen discipline to plan the appropriate course selections.

Major Curricula

Major Requirements. The departmental requirements are stated under the respective curricula.

Department of Biological Sciences

James J. Nagler, Dept. Chair (252 Life Sc. Bldg. 83844-3051; phone 208-885-6280; www.uidaho.edu/sci/biology).

The Department of Biological Sciences offers B.S. degrees in Biochemistry, Biology (B.A. & B.S.), Medical Sciences, Microbiology, and Molecular Biology and Biotechnology. The core curriculum, used for every major, involves exposure to concepts fundamental to all living things at several levels of organization and emphasizes a broad cultural base and specific training in biology, chemistry, mathematics, and physics. A diverse range of upper division electives are available that support each of the majors. Courses offered by the Department of Biological Sciences are available to students majoring in other disciplines, who wish to increase their knowledge of science, or who wish to obtain an academic minor.

Well-equipped laboratories are available and students are encouraged to undertake research projects with the faculty. A wide variety of ongoing projects have produced a stimulating environment for graduate and undergraduate research. These projects include areas such as: pathophysiology of diseases that affect gastrointestinal functions; gene regulation changes in response to selection and the evolution of disordered proteins; behavioral development, play, sexual selection and female mate choice; intraflagellar transport; the diversity and distribution of prokaryotes; mechanisms behind morbidity and mortality in infants congenitally infected with human cytomegalovirus; characterizing evolutionarily permissible ecological structures in microbial ecosystems and on developing bioinformatics for very large sequence datasets; molecular cues that promote development of the nervous system; patterns of species diversification across the tree of life; prokaryote motility system; the genomic architecture of evolving populations; protein structure and function; neuromuscular biomechanics of vertebrate organisms; models of adaptive evolution and experimental evolution in viruses; regulation of the immune response to coronavirus infection in the lung; effect of environmental factors on fish reproductive biology; cellular and molecular mechanisms of vertebrate retinal development and regeneration; phylogenetic methodology and comparative phylogeography; the ecology and evolution of prokaryotic organisms; adaptive evolution and mammalian genome evolution.

For more complete information on research concentrations, please see faculty profiles on the departmental web site at www.uidaho.edu/sci/biology/.

Graduates from the department enter a variety of fields and many continue their education toward an advanced degree. Recent graduates have entered health-related professions, primary and secondary teaching, agribusiness, veterinary school, graduate school, law school, state and national agencies that deal with biology (e.g., Idaho Department of Fish and Game, Environmental Protection Agency, United States Forest Service), as well as a variety of environmental consulting agencies and biotechnology companies.

Prospective students, or students desiring more information, may write, call (208-885-6280) or email the department (biosci@uidaho.edu).

Majors

- Biochemistry (B.S.Biochem) (p. 333)
- Biology (B.A. or B.S.) (p. 334)
- Medical Sciences (B.S.) (p. 335)
- Microbiology (B.S.Microbiol.) (p. 336)
- Molecular Biology and Biotechnology (B.S.M.B.B.) (p. 337)

Minors

- Bioethics Minor (See Department of Politics and Philosophy (p. 283))
- Biology Minor (p. 335)
- Biochemistry Minor (p. 334)
- Microbiology Minor (p. 337)
- Molecular Biology and Biochemistry Minor (p. 337)

Biological Sciences Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Biological Sciences. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree and the Department of Biological Sciences Graduate Student Handbook for required courses and procedures.

- Biology (M.S.) (p. 335)
- Biology (Ph.D.) (p. 335)
- Microbiology, Molecular Biology, and Biochemistry (Ph.D.)
- Neuroscience (Ph.D.)

Biochemistry (B.S.Biochem.)

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114 , BIOL 115, and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 380	Biochemistry I	4
BIOL 382	Biochemistry I Laboratory	2
BIOL 400	Seminar	1-16
BIOL 454	Biochemistry II	3
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 253	Quantitative Analysis	3

CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 372	Organic Chemistry II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
STAT 251	Statistical Methods	3
Select one of the following Senior Experience courses		2
BIOL 401	Undergraduate Research	
BIOL 405	Practicum in Anatomy Laboratory Teaching	
BIOL 407	Practicum in Biology Laboratory Teaching	
BIOL 408	Practicum in Human Physiology Laboratory Teaching	
BIOL 411	Senior Capstone	
Select electives from the following: [1]		6
BE 433	Bioremediation	
BIOL 426	Systems Biology	
BIOL 432	Immunology	
BIOL 444	Genomics	
BIOL 461	Neurobiology	
BIOL 482	Protein Structure and Function	
BIOL 485	Prokaryotic Molecular Biology	
BIOL 487	Eukaryotic Molecular Genetics	
CHEM 374	Organic Chemistry II: Lab	
CHEM 472	Medicinal Chemistry	
CHEM 473	Intermediate Organic Chemistry	
FS 520	Instrumental Analysis	
PLSC 486	Plant Biochemistry	
PLSC 488	Genetic Engineering	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing	
Select one of the following:		3
CHEM 302	Principles of Physical Chemistry	
CHEM 305	Physical Chemistry	
CHEM 306	Physical Chemistry II	
Total Hours		80-95

Courses to total 120 credits for this degree

[1] Additional classes can be substituted with prior approval from adviser and chairperson

Biochemistry Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
BIOL 454	Biochemistry II	3
Select 12 credits from the following:		12
BIOL 382	Biochemistry I Laboratory	
CHEM 302 & CHEM 303	Principles of Physical Chemistry and Principles of Physical Chemistry Lab	
BIOL 400	Seminar	
BIOL 401	Undergraduate Research	
Total Hours		19

Courses to total 19 credits for this minor

Biology (B.A. or B.S.)

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114, BIOL 115, and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Principles of Biological Structure and Function	4
BIOL 300	Survey of Biochemistry	3-4
or BIOL 380	Biochemistry I	
BIOL 310	Genetics	3
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
BIOL 315	Genetics Lab	1
BIOL 400	Seminar	1-16
BIOL 421	Advanced Evolution/Population Dynamics	3
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
MATH 170	Calculus I	4
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select one of the following Senior Experience courses		2
BIOL 401	Undergraduate Research (Max 8 credits)	
BIOL 405	Practicum in Anatomy Laboratory Teaching (Max 8 credits)	
BIOL 407	Practicum in Biology Laboratory Teaching (Max 12 credits)	
BIOL 408	Practicum in Human Physiology Laboratory Teaching (Max 8 credits)	
BIOL 411	Senior Capstone	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	

PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select one of the following:		4
PHYS 112 & 112L	General Physics II and General Physics II Lab	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Select 14 credits of approved electives		14
Total Hours		78-94

Biology B.A. Students must also complete:

Code	Title	Hours
Two humanities courses in addition to the minimum university-wide general education requirements [1]		6
One Social Science course in addition to the minimum university-wide general education requirements [1]		3
0-16 credits in a foreign language [2]		0-16
Total Hours		9-25

[1] Courses satisfying the humanities requirement are those dealing with the arts, literature, and philosophy. Courses satisfying the social science requirement are those courses dealing with a person's social condition including social relations, institutions, history, and participation in an organized community. Refer to online degree audit system through Web registration system or your academic advisor for a listing of appropriate courses.

[2] Foreign Languages 0-16 credits (zero-four courses) competence in one foreign language equivalent to that gained by the completion of four semesters of college courses through the intermediate level. This requirement may be satisfied by the completion of either of the following options

1. 16 credits or four high-school units in one foreign language, or
2. 12 credits in one foreign language, and one three-credit course in literature translated from the same language. The 12 credits may be satisfied by three high-school units in one foreign language.

Courses to total 120 credits for this degree

Biology (M.S.)

Master of Science. Majors in Biology and Neuroscience.

The M.S. program emphasizes research including, but not limited to the departmental and multidisciplinary areas described above. Admission is based upon the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to be the student's mentor. An incoming student arranges a formal graduate program of at least 30 semester hours in consultation with his or her major professor and graduate committee. A laboratory research based thesis is required.

Biology (Ph.D.)

Doctor of Philosophy. Majors in Biology; Microbiology, Molecular Biology, and Biochemistry (MMBB); and Neuroscience.

The Ph.D. program emphasizes research including, but not limited to the departmental and multidisciplinary area described above. Admission is based upon the compatibility of the student's research interests with the areas of concentration offered by the department, and the availability of a faculty member to be the student's mentor. A doctoral student develops a graduate program of at least 78 semester hours in consultation with his or her major professor and graduate committee. A laboratory research based thesis is required.

Biology Minor

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Principles of Biological Structure and Function	4
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
Total Hours		24

Courses to total 24 credits for this minor

Medical Sciences (B.S.)

To graduate in this program, students must earn a minimum grade of "C" in BIOL 115 and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 120	Human Anatomy	4
BIOL 121	Human Physiology	4
BIOL 204	Special Topics	1-16
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 310	Genetics	3
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 315	Genetics Lab	1
BIOL 380	Biochemistry I	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1

MATH 170	Calculus I	4
PHIL 103	Introduction to Ethics	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select one of the following Physics sequences:		8
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 112 & 112L	General Physics II and General Physics II Lab	
OR		
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Select 3 credits of Written Communication courses from the following:		3
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing	
ENGL 318	Science Writing	
Select one of the following Senior Capstone courses:		2
BIOL 401	Undergraduate Research (Max 8 credits)	
BIOL 405	Practicum in Anatomy Laboratory Teaching (Max 8 credits)	
BIOL 408	Practicum in Human Physiology Laboratory Teaching (Max 8 credits)	
BIOL 411	Senior Capstone	
Select one of the following:		3
ANTH/SOC 417	Social Data Analysis	
BIOL 456	Computer Skills for Biologists	
CHEM 302	Principles of Physical Chemistry	
MATH 437	Mathematical Biology	
STAT 431	Statistical Analysis	
Select 3 credits of Critical Thinking courses from the following:		3
ENGL 207	Persuasive Writing	
HIST 382	History of Biology: Conflicts and Controversies	
PHIL 201	Critical Thinking	
PHIL 202	Introduction to Symbolic Logic	
Select 2-3 credits of Leadership and Professional courses from the following:		2-3
BIOL 398	Internship	
MHR 311	Introduction to Management	
INTR 492	College of Science Ambassadors (Max 8 credits)	
INTR 496	Pre-Health Peer Mentors (Max 4 credits)	
PHIL 361	Professional Ethics (Max 6 credits)	
PSYC 414	Traumatic Events: Preparation, Intervention, Evaluation	
Select 6 credits of Psychology courses from the following:		6
PSYC 305	Developmental Psychology	
PSYC 311	Abnormal Psychology	
PSYC 325	Cognitive Psychology	
PSYC 372	Physiological Psychology	
PSYC 470	Introduction to Chemical Addictions	
PSYC 472	Introduction to the Pharmacology of Psychoactive Drugs	
Select 6 credits of Global and Cultural Competence courses from the following:		6
ANTH 327	Belief Systems	
ANTH 427	Racial and Ethnic Relations	
COMM 335	Intercultural Communication	
FCS 411	Global Nutrition	
HIST 380	Disease and Culture:History of Western Medicine	
JAMM 340	Cultural Diversity and the Media	
PHIL 367	Global Justice	
POLS 385	Political Psychology	
SOC 201	Introduction to Inequalities & Inclusion	
SOC 340	Social Change & Globalization	
Select 9 credits of Biomedical Sciences courses from the following:		9
BE 425	Introduction to Biomedical Engineering	
BIOL 314	Ecology and Population Biology	
BIOL 324	Comparative Vertebrate Anatomy	
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 428	Microscopic Anatomy	
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
BIOL 444	Genomics	
BIOL 447	Virology	
BIOL 454	Biochemistry II	
BIOL 461	Neurobiology	
BIOL 474	Developmental Biology	
BIOL 482	Protein Structure and Function	
BIOL 487	Eukaryotic Molecular Genetics	
CHEM 372	Organic Chemistry II	
FCS 361	Advanced Nutrition	
H&S 450	Critical Health Issues	
H&S 451	Psychosocial Determinants of Health	
Total Hours		101-117

Courses to total 120 credits for this degree

Microbiology (B.S.Microbiol.)

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114, BIOL 115, and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1

BIOL 380	Biochemistry I	4
BIOL 400	Seminar	1-16
BIOL 401	Undergraduate Research	1-4
or BIOL 301	Undergraduate Research	
or PLSC 440	Advanced Laboratory Techniques	
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 372	Organic Chemistry II	3
MATH 170	Calculus I	4
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select one of the following Senior Experience courses:		2
BIOL 401	Undergraduate Research	
BIOL 405	Practicum in Anatomy Laboratory Teaching	
BIOL 407	Practicum in Biology Laboratory Teaching	
BIOL 408	Practicum in Human Physiology Laboratory Teaching	
BIOL 411	Senior Capstone	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select one of the following:		4
PHYS 112 & 112L	General Physics II and General Physics II Lab	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Select 15 credits of Approved Electives from the following: [1]		15
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
BIOL 447	Virology	
BIOL 444	Genomics	
BIOL 482	Protein Structure and Function	
BIOL 485	Prokaryotic Molecular Biology	
BIOL 487	Eukaryotic Molecular Genetics	
FS 416	Food Microbiology	
FS 417	Food Microbiology Laboratory	
MATH 437	Mathematical Biology	
PLSC 476	Cell Biology	
PLSC 488	Genetic Engineering	
SOIL 425	Microbial Ecology	
Total Hours		78-96

Courses to total 120 credits for this degree

[1] Additional classes can be substituted with prior approval from advisor and chairperson.

Microbiology Minor

Code	Title	Hours
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 380	Biochemistry I	4
Select three courses from the following:		9-10
BIOL 416	Plant Diversity and Evolution	
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
BIOL 447	Virology	
BIOL 485	Prokaryotic Molecular Biology	
BIOL 487	Eukaryotic Molecular Genetics	
FS 416	Food Microbiology	
SOIL 425	Microbial Ecology	
Total Hours		22-23

Courses to total 22 credits for this minor

Molecular Biology and Biochemistry Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
BIOL 454	Biochemistry II	3
Select one of the following:		3
CHEM 302	Principles of Physical Chemistry	
CHEM 305	Physical Chemistry	
CHEM 306	Physical Chemistry II	
Select three courses from the following:		10
BIOL 382	Biochemistry I Laboratory	
BIOL 482	Protein Structure and Function	
BIOL 487	Eukaryotic Molecular Genetics	
PLSC 476	Cell Biology	
PLSC 488	Genetic Engineering	
Total Hours		20

Courses to total 20 credits for this minor

Molecular Biology and Biotechnology (B.S.M.B.B.)

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114, BIOL 115, and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1

BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 380	Biochemistry I	4
BIOL 382	Biochemistry I Laboratory	2
BIOL 400	Seminar	1-16
BIOL 454	Biochemistry II	3
BIOL 485	Prokaryotic Molecular Biology	3
or BIOL 487	Eukaryotic Molecular Genetics	
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 372	Organic Chemistry II	3
MATH 170	Calculus I	4
PLSC 488	Genetic Engineering	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select 8-10 credits of Approved Electives from the following:		8-10
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
BIOL 444	Genomics	
BIOL 447	Virology	
BIOL 461	Neurobiology	
BIOL 474	Developmental Biology	
BIOL 482	Protein Structure and Function	
BIOL 485	Prokaryotic Molecular Biology [2]	
BIOL 487	Eukaryotic Molecular Genetics	
FS 416	Food Microbiology	
FS 417	Food Microbiology Laboratory	
PLSC 476	Cell Biology	
Select four credits from the following:		4
BIOL 301	Undergraduate Research	
BIOL 401	Undergraduate Research	
BIOL 499	Directed Study	
PLSC 440	Advanced Laboratory Techniques	
Select one of the following Senior Experience courses:		2
BIOL 401	Undergraduate Research	
BIOL 405	Practicum in Anatomy Laboratory Teaching	
BIOL 407	Practicum in Biology Laboratory Teaching	
BIOL 408	Practicum in Human Physiology Laboratory Teaching	
BIOL 411	Senior Capstone	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing	
Select one of the following sequences:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select one of the following:		4
PHYS 112 & 112L	General Physics II and General Physics II Lab	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Total Hours		85-102

Courses to total 120 credits for this degree

1 Additional classes can be substituted with prior approval from advisor and chairperson.

2 *Either BIOL 485 or BIOL 487 may be used as an elective if not taken above as a required course.*

Program in Bioinformatics and Computational Biology

Dave Tank, BCB Program Director (258 Life Sciences South 83844-3051; phone 208-885-5015 bcb@uidaho.edu; www.uidaho.edu/sci/bcb).

The interdisciplinary program in Bioinformatics and Computational Biology is administered by the College of Science (p. 332). (http://www.uidaho.edu/sci)

Technological advances in the last two decades have created an avalanche of biological data, and this challenge will only grow in the immediate future. Modern tools and knowledge to analyze and interpret large, complex datasets are thus increasingly central to much of biology. They are required to improve human health, natural and agricultural resource management, and to simply understand the natural world better. Moreover, industries and agencies in the areas of health, agriculture, and conservation require workers who master these new tools and knowledge. It has become increasingly clear that success in science requires an integrative approach that unites experimental design, data collection, analysis and interpretation in a common framework. To meet this need, the University of Idaho launched the interdisciplinary Bioinformatics and Computational Biology (BCB) graduate program in 2003. This program includes faculty with expertise in the Biological Sciences, Mathematics, Statistics, and Computer science.

The University of Idaho offers M.S. and Ph.D. degrees in Bioinformatics and Computational Biology (BCB) as well as a graduate certificate in BCB. The BCB program is offered on-campus in Moscow at the University of Idaho, and is administered by the College of Science.

A degree in BCB will require coursework and practical experience in biology, mathematics, statistics, and computer science. The focus of the degree will be on learning to develop and use computational and mathematical tools to analyze biological data. BCB is a highly interdisciplinary program. It requires students and faculty to bridge these disciplines. BCB faculty members are drawn from twelve departments from the Colleges of Agricultural and Life Sciences, Engineering, Letters, Arts and Social Sciences, Natural Resources and Science. These faculty members are available to serve on BCB graduate student committees.

The M.S. and Ph.D. degrees prepare students for a lifetime of discovery. They enable the graduate to advance the state of the art, not merely to keep up with it. The graduate program develops the student's critical thinking, investigatory, and expository skills. He/she will acquire the methodological skills to resolve important open problems and tackle challenging new projects. The student will learn to present problems and solutions, both orally and in writing.

Bioinformatics and Computational Biology Graduate Program

- Bioinformatics and Computational Biology Graduate Academic Certificate (p. 341)
- Bioinformatics and Computational Biology (M.S.) (p. 339)
- Bioinformatics and Computational Biology (Ph.D.) (p. 340)

Bioinformatics and Computational Biology (M.S.)

Master of Science. Major in Bioinformatics and Computational Biology.

Admission to this program is highly competitive; meeting admission requirements is not a guarantee of admission. Students who wish to enter the master's or doctoral degree program must demonstrate mathematical maturity, skill in the use of high-level programming language and a basic knowledge of molecular biology. However, students lacking one of these may be admitted with the requirement that they make up the deficiency. At least a 3.0 undergraduate GPA if the student graduated within the last five years and a total Graduate Record Examination score of at least 1300+4 are the minimum admission requirements, though exceptions to GPA and GRE requirements may be made in exceptional circumstances. Students for whom English is a second language must have a TOEFL score of 600 (250 computer-based or 100 IBT) or higher. Applicants must provide at least three letters of reference, speaking to the applicant's aptitude for graduate research, and a statement of research interests that clearly identifies the research he or she would like to pursue and why they want to pursue it at the University of Idaho.

Both the M.S. and Ph.D. degrees require a thesis. Students will take research and thesis credits BCB 500 or research and dissertation credits BCB 600. The M.S. degree will require at least nine credits of thesis research and the Ph.D. degree will require at least thirty credits. M.S. theses for a BCB degree will demonstrate a high level of scholarly achievement, and doctoral dissertations will represent a significant, original contribution to the field. In addition to the thesis and dissertation, students will publish their work in appropriate peer-reviewed venues. Students will present their thesis and dissertations publicly at their final defense.

Each student's graduate committee will consist of at least four faculty members. This committee will represent the three BCB disciplines (biological sciences, computer sciences, and mathematical sciences) and will include at least three participating BCB faculty members. Co-advising by major professors in different disciplines will be particularly attractive for BCB degrees, and is possible at the discretion of the student and his or her committee. There is no explicit requirement for an "external" committee member, since each committee will already includes faculty from at least three different disciplines.

There will be no qualifying examination. The Ph.D. will require a preliminary examination, which will be taken no later than the end of the fifth semester. The preliminary examination will have three components. First, it will include a written thesis proposal prepared in the format of a federal research grant, and submitted to the committee at least four weeks prior to the oral examination. Second, there will be a public, oral presentation of the research proposal. Third, the committee will conduct a non-public oral examination in which committee members will ask questions about the proposed research, and about background and core coursework.

Incoming students admitted with background deficiencies will take background courses. For example, biology majors with little formal introduction to computation will take background courses in computer science. The specific required background courses will be determined by the students' graduate committees with the approval of the program director. Note that credits from courses numbered 300 and below do not count toward the BCB degree requirements, though they may be required to fulfill deficiencies.

The core courses form a central, shared educational experience for all BCB students. These courses will enable them to share a common language, and to discuss problems from multiple disciplinary points of view. This shared experience will also give BCB students a sense of identity and community, which will encourage them to help each other overcome cultural and terminological differences that usually make such interdisciplinary interactions challenging. When possible and appropriate, core courses will include group projects using team members with backgrounds in different disciplines.

The *depth* courses provide more detailed knowledge of bioinformatics and computational biology, and provide the springboard for graduate research. The list of courses will evolve with the research interests of the BCB faculty participants, and more will be added as new faculty members join the program. See the program webpage at www.uidaho.edu/cogs/bcb for the latest information.

Other courses may be required as determined by the student's committee.

To explicitly make it easier to bridge the traditional gap between disciplines, the BCB program includes four bridging activities:

Seminars and workshops

Seminar series are available, and BCB students are required to participate. Seminars are an opportunity for students to interact with experts in a variety of fields. Workshops will provide practical experience with tools and techniques.

- **Lab rotations:** In order to expose doctoral students to the research perspectives of another discipline, we will require them to spend at least one semester in a lab outside the discipline of their major professor. The lab will be the research lab of one of the participating BCB faculty outside the discipline of the student's major professor. The student's committee will determine, in conjunction with participating faculty members, with whom the student will meet this requirement. There is no lab rotation requirement for M.S. students.
- **One Credit Supplements:** General courses in computer science, mathematics and statistics sometimes lack material specific to bioinformatics and computational biology. Participating faculty

will offer one-credit supplements to current courses in order to provide this connection without duplicating courses in the current catalogue. These will be required of BCB students as determined by their graduate committees.

- **Teaching experience:** Each doctoral candidate will be required to have at least one semester of teaching experience relevant to the BCB program with the details of this requirement determined by his or her committee. This requirement may be satisfied, for example, by teaching a course, running a workshop, offering a supplement, or working as a teaching assistant.

The MS requires a minimum 30 credits and the Ph.D. requires a minimum 78 credits. The BCB program assumes the usual graduate full time load of at least 9 credits per semester. Note that the Ph.D. requires at least 18 credits of "other", supplemental, or workshop courses at the 400 level or above, since there are a total of 60 minimum required core, depth, thesis, seminar, and laboratory credits, and the student must have at least 78 credits to graduate. No more than 3 credits of workshop may apply to the degree, and credits for courses numbered below 400 cannot apply toward the degree. (These are general UI requirements.)

M.S. Degree

Requirements	Credits
Background	As determined on admission
Core courses	9 credits
Depth courses	9 credits: 6 in one area and 3 in the other area
Seminar	2 credits
Lab rotation	None
Supplemental	As determined by thesis committee
Thesis	10 credits, minimum
Other	As determined by thesis committee
Total (min)	**30 Credits**

Bioinformatics and Computational Biology (Ph.D.)

Doctor of Philosophy. Major in Bioinformatics and Computational Biology.

Admission to this program is highly competitive; meeting admission requirements is not a guarantee of admission. Students who wish to enter the master's or doctoral degree program must demonstrate mathematical maturity, skill in the use of high-level programming language and a basic knowledge of molecular biology. However, students lacking one of these may be admitted with the requirement that they make up the deficiency. At least a 3.0 undergraduate GPA if the student graduated within the last five years and a total Graduate Record Examination score of at least 1300+4 are the minimum admission requirements, though exceptions to GPA and GRE requirements may be made in exceptional circumstances. Students for whom English is a second language must have a TOEFL score of 600 (250 computer-based or 100 IBT) or higher. Applicants must provide at least three letters of reference, speaking to the applicant's aptitude for graduate research, and a statement of research interests that clearly identifies the research he or she would like to pursue and why they want to pursue it at the University of Idaho.

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Each student's graduate committee will consist of at least four faculty members. This committee will represent the three BCB disciplines (biological sciences, computer sciences, and mathematical sciences) and will include at least three participating BCB faculty members. Co-advising by major professors in different disciplines will be particularly attractive for BCB degrees, and is possible at the discretion of the student and his or her committee. There is no explicit requirement for an "external" committee member, since each committee will already includes faculty from at least three different disciplines.

There will be no qualifying examination. The Ph.D. will require a preliminary examination, which will be taken no later than the end of the fifth semester. The preliminary examination will have three components. First, it will include a written thesis proposal prepared in the format of a federal research grant, and submitted to the committee at least four weeks prior to the oral examination. Second, there will be a public, oral presentation of the research proposal. Third, the committee will conduct a non-public oral examination in which committee members will ask questions about the proposed research, and about background and core coursework.

Incoming students admitted with background deficiencies will take background courses. For example, biology majors with little formal introduction to computation will take background courses in computer science. The specific required background courses will be determined by the students' graduate committees with the approval of the program director. Note that credits from courses numbered 300 and below do not count toward the BCB degree requirements, though they may be required to fulfill deficiencies.

The core courses form a central, shared educational experience for all BCB students. These courses will enable them to share a common language, and to discuss problems from multiple disciplinary points of view. This shared experience will also give BCB students a sense of identity and community, which will encourage them to help each other overcome cultural and terminological differences that usually make such interdisciplinary interactions challenging. When possible and appropriate, core courses will include group projects using team members with backgrounds in different disciplines.

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Other courses may be required as determined by the student's committee.

To explicitly make it easier to bridge the traditional gap between disciplines, the BCB program includes four bridging activities:

Seminars and workshops

Seminar series are available, and BCB students are required to participate. Seminars are an opportunity for students to interact with experts in a variety of fields. Workshops will provide practical experience with tools and techniques.

- **Lab rotations:** In order to expose doctoral students to the research perspectives of another discipline, we will require them to spend at least one semester in a lab outside the discipline of their major professor. The lab will be the research lab of one of the participating BCB faculty outside the discipline of the student's major professor. The student's committee will determine, in conjunction with participating faculty members, with whom the student will meet this requirement. There is no lab rotation requirement for M.S. students.
- **One Credit Supplements:** General courses in computer science, mathematics and statistics sometimes lack material specific to bioinformatics and computational biology. Participating faculty will offer one-credit supplements to current courses in order to provide this connection without duplicating courses in the current catalog. These will be required of BCB students as determined by their graduate committees.
- **Teaching experience:** Each doctoral candidate will be required to have at least one semester of teaching experience relevant to the BCB program with the details of this requirement determined by his or her committee. This requirement may be satisfied, for example, by teaching a course, running a workshop, offering a supplement, or working as a teaching assistant.

The MS requires a minimum 32 credits and the Ph.D. requires a minimum 78 credits. The BCB program assumes the usual graduate full time load of at least 9 credits per semester. Note that the Ph.D. requires at least 18 credits of "other", supplemental, or workshop courses at the 400 level or above, since there are a total of 60 minimum required core, depth, thesis, seminar, and laboratory credits, and the student must have at least 78 credits to graduate. No more than 3 credits of workshop may apply to the degree, and credits for courses numbered below 400 cannot apply toward the degree. (These are general UI requirements.)

Ph.D. Degree

Requirements	Credits
Background	As determined on admission
Core courses	9 credits
Depth courses	15 credits: 3 in each of the other two areas and 12 in additional depth courses
Seminar	3 credits
Lab rotation	3 credits, not in discipline of major professor
Supplemental	As determined by thesis committee
Dissertation	30 credits, minimum
Teaching requirement	3 credits
Other	As determined by committee
Total (min)	**78 (see text)**

Bioinformatics and Computational Biology Graduate Academic Certificate

There is a large and growing demand for graduates with training in bioinformatics and computational biology. These areas are vital to the biotechnology industry, the medical sciences, and conservation biology. This certificate will provide graduate students who are pursuing graduate degrees in other areas with recognition for taking multiple courses of the BCB curriculum, and thus building a strong foundation in bioinformatics and computational biology. For more information please email bcb@uidaho.edu or visit the BCB Program office in Life Sciences South room 441D.

Code	Title	Hours
BIOL 522	Molecular Evolution	3
CS 515	Computational Biology: Sequence Analysis	3
MATH 563	Mathematical Genetics	3
Select 3 credits from the following: [1]		3
BCB 510	Computational Science for Biologists	
BCB 511	Applied Bioinformatics	
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 444	Genomics	
BIOL 456	Computer Skills for Biologists	
BIOL 545	Principles of Systematic Biology	
BIOL 547	Virology	
BIOL 548	Evolutionary Ecology	
BIOL 585	Prokaryotic Molecular Biology	
BIOL 587	Eukaryotic Molecular Genetics	
CS 511	Parallel Programming	
CS 512	Parallel Algorithms	
CS 570	Artificial Intelligence	
CS 572	Evolutionary Computation	
CS 575	Machine Learning	
MATH 428	Numerical Methods	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 538	Stochastic Models	
PLSC 542	Biochemistry	
PLSC 588	Genetic Engineering	
PHYS 533	Statistical Mechanics	
STAT 519	Multivariate Analysis	
STAT 565	Computer Intensive Statistics	
Total Hours		12

Courses to total 12 credits for this certificate

1 Three credits a different area than the student's disciplinary focus. This course must be approved by the BCB director or another member of the BCB governing board.

Department of Chemistry

Ray von Wandruszka, Dept. Chair (116 Malcolm M. Renfrew Hall 83844-2343; phone 208-885-6552; chemoff@uidaho.edu).

Chemistry is the central science; the foundation on which a variety of applied and nonapplied disciplines build. Chemistry deals with the composition, structure, and properties of substances and the changes they undergo. It is the study of the materials of which the entire universe is composed. Chemistry graduates will find an impressive array of options and exciting opportunities in fields such as basic research, environmental protection, instrumentation, the search for and synthesis of new therapeutic drugs, new product and process development, technical marketing, market research, forensic chemistry, teaching at all levels, and information science. Moreover, an education in chemistry is valuable in health sciences such as medicine, pharmacology, clinical chemistry, and industrial hygiene. It can be useful as well in nontechnical areas such as advertising, journalism, patent law, banking, and investment counseling. The options are bounded only by the limits of one's imagination.

There are four distinct undergraduate curricula designed to meet a wide range of professional needs. The professional option is the curriculum of choice for students who are interested in practicing chemistry as a career, including graduate study for an advanced degree in chemistry or a related field. The degree is certifiable to the American Chemical Society. The general chemistry option provides a suitable foundation for those students needing a strong background in chemistry, but not necessarily aspiring to become professional chemists, such as those in Education or Chemical Engineering. The pre-medical option has been designed to serve the needs of those students interested in careers in medicine, pharmacy, dentistry, or other health related fields. The forensics option is a full-fledged chemistry degree that prepares students for a career in forensic science.

Students majoring in chemistry at UI have the very good fortune to interact with an award-winning, distinguished teaching faculty. They have a unique opportunity to participate in undergraduate research in a nurturing environment where they work side by side with graduate students, postdoctoral fellows, and faculty members. Very often the research carried out by undergraduates results in publications in leading chemical journals. As a result of the strong research programs in the department, undergraduates have the opportunity in their courses to have hands-on experience with, or to acquire data from, modern sophisticated instrumentation such as FT nuclear magnetic resonance spectrometers, gas chromatographs interfaced with mass spectrometers, and laser Raman, infrared and ultraviolet spectrometers, in addition to the more classical techniques. Considerable use of computers is made in laboratory courses and as an aid to instruction. Because our students receive a first-class education, they are in demand by prospective employers and graduate schools.

The Chemistry Department trains its B.S. graduates to attain a high level of familiarity with:

- basic chemical concepts and fundamental chemical processes;
- organic synthesis and characterization;
- analytical and environmental approaches and problem solving;
- inorganic, material, and nuclear chemical concepts and applications;
- physical chemical aspects of natural systems and theoretical modeling thereof.

In the course of their studies, students will acquire:

- strong lab techniques and synthetic skills;
- familiarity with the chemical literature and relevant search techniques;
- an awareness of safety issues;
- communication skills;
- problem solving skills;
- basic research skills;
- a sense of professionalism and competence.

M.S. and Ph.D. degrees are offered in chemistry with concentrations in analytical, inorganic, organic, and physical chemistry.

Entering graduate students (master's and doctoral candidates) are expected to demonstrate proficiency in chemistry by taking a series of four examinations in the areas of analytical (qualitative, quantitative, and instrumental), inorganic, organic (including qualitative organic analysis), and physical chemistry. These must be taken at the first offering after the student's arrival. These examinations are offered immediately before registration week of the fall and spring semesters. Questions are at an advanced undergraduate level.

Students who score at greater than the 50th percentile (established nationally) on a qualifying examination may begin with a 500-level course in that area in their first semester and are given credit for the relevant 400-level course (CHEM 455, CHEM 466, CHEM 476, and/or CHEM 496). Students who score below the 50th percentile on an examination will begin course work in the respective area: analytical, CHEM 454 (the lab in this course may be bypassed by petition if the student can present evidence of adequate exposure; previous course at B level); CHEM 495; CHEM 463, CHEM 473.

All candidates for the M.S. or Ph.D. degree in chemistry are required to have teaching experience, here or elsewhere, as part of their training and will complete CHEM 506 (Introduction to Teaching and Research Skills) at their first opportunity on entering the program.

Chemistry graduate students will acquire advanced perspectives in analytical, inorganic, organic, and physical chemistry. They will gain a detailed understanding of the problems, challenges, and opportunities in their chosen subdiscipline, and an in-depth familiarity with the theoretical underpinnings and methodologies in their specific research area. Graduate students will also acquire skills in teaching, directing, and mentoring others.

Majors

- Chemistry (B.S.) (p. 343)

Minors

- Chemistry Minor (p. 345)

Graduate Programs

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Chemistry. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Chemistry (M.S.) (p. 344)
- Chemistry (Ph.D.) (p. 344)

Chemistry (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and completion of one of the following options.

A. General Option

This degree provides the basic elements needed for a career in chemistry. It is especially suited for students who wish to enter other professions that require a background in science; including high school teaching, patent law, and technology management.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Select one of the following:		3-4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
PHYS 213	Engineering Physics III	
Total Hours		49-50

Courses to total 120 credits for this degree

B. Professional Option

Note: Students who complete this option will be certifiable to the American Chemical Society.

This curriculum provides a suitable background for students wishing to enter the profession of chemistry or to pursue graduate study for an advanced degree in chemistry or a related field.

Code	Title	Hours
BIOL 380	Biochemistry I	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
CHEM 454	Instrumental Analysis	3-4
CHEM 463	Inorganic Chemistry	3
CHEM 464	Inorganic Chemistry	3
CHEM 465	Inorganic Chemistry Laboratory	1
CHEM 491	Research (Max 12 credits)	2
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Select one of the following:		3-4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
PHYS 213	Engineering Physics III	
Selct two advanced Chemistry courses approved by the Chemistry Department in accordance with American Chemical Society stipulations		6
Total Hours		71-73

Courses to total 120 credits for this degree

C. Pre-Medical Option

This curriculum provides a suitable foundation in chemistry for students who intend to enter careers in medicine, dentistry, pharmacy, etc.

Code	Title	Hours
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 380	Biochemistry I	4
BIOL 382	Biochemistry I Laboratory	2
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1

CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
CHEM 472	Medicinal Chemistry	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Chemistry Elective		6-7
CHEM 454	Instrumental Analysis	
CHEM 473	Intermediate Organic Chemistry	
Total Hours		69-70

Courses to total 120 credits for this degree

D. Forensics Option

Code	Title	Hours
Select any CS courses numbered 101 or higher		3
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 380	Biochemistry I	4
BIOL 382	Biochemistry I Laboratory	2
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
CHEM 454	Instrumental Analysis (Max 4 credits)	3-4
GEOL 426	Principles of Forensic Mineralogy and Geology	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
STAT 251	Statistical Methods	3
Select one of the following:		3-4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	
GENE 314	General Genetics	
Select one of the following:		3-4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
PHYS 213	Engineering Physics III	
Total Hours		79-82

Courses to total 120 credits for this degree

Chemistry (M.S.)

Master of Science. Major in Chemistry.

1. Thesis option: General M.S. requirements apply. At least one credit must be earned in CHEM 501 Seminar.
2. Non-thesis option: A minimum of 30 credits in course work is required and must be divided among the following:
   a. 20 credits in chemistry courses numbered 500 or above (including one credit in CHEM 501 Seminar);
   b. 10 credits in chemistry courses numbered 400 or above, or related courses numbered 300 or above. A written and/or oral examination that covers graduate course work must be taken during the final semester in residence.

Chemistry (Ph.D.)

Doctor of Philosophy. Major in Chemistry.

The student will enroll for at least 33 credit hours in courses. All students will take CHEM 509 and obtain two credits in CHEM 501. In addition, sufficient credit hours of research will be completed to meet a total minimum registration requirement of 78 credits.

The student is encouraged to take courses in related fields, e.g., mathematics, physics, chemical engineering, geochemistry, computer science, electronics, or biochemistry. This work can be designated as the minor or supporting field on the study program.

All Ph.D. candidates are required to participate in seminar (CHEM 501) while in residence, even though not formally registered for credit in this course. Registration may be for zero credit.

Cumulative examinations are general examinations in the student's field of specialization to judge the breadth of knowledge gained by the student from courses, lectures, and the literature, as well as the ability to use this knowledge in the solution of a variety of problems. Once started, a student must continue to take these examinations each time they are offered whenever the student is in residence and is eligible. If a given examination is not taken, a failing grade is received. Examinations are approximately three hours in length and are given four times each semester and, in exceptional cases, during the summer session. Normally, students will take examinations only in the chosen area of concentration, but they may elect to take them in other areas of chemistry. The student must obtain an average grade of 50% in eight examinations to continue in the Ph.D. program.

Shortly after completing the final cumulative examination, Ph.D. students are required to submit a written proposal on their doctoral research project and defend it at an oral examination by their graduate committee (CHEM 590). The proposal will be limited to a maximum of 5,000 words, excluding the bibliography, and will consist of a statement of the proposed doctoral research problem, an in-depth discussion of the

relevant literature, a listing of the major research objectives, a summary of the proposed experimental work plan, and an appropriate bibliography.

Chemistry Minor

This program is designed to give a non-chemistry major a sufficient background in general chemistry and laboratory techniques to improve his or her employment prospects as a laboratory technician and to improve the technical background of the student interested in science education or communication.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 302	Principles of Physical Chemistry	3
CHEM 303	Principles of Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
Total Hours		25

Courses to total 25 credits for this minor

Department of Geography

Raymond Dezzani, Dept. Interim Chair (201 McClure Hall, 83844-3021; phone 208-885-6216; geography@uidaho.edu; www.uidaho.edu/sci/geography).

Geography is the science of place and space. Geographers ask where things are located on the Earth, why they are located where they are, how places differ from one another and change over time, and how people interact with the environment. Geography is organized into four primary branches: human geography, physical geography, human-environment interaction, and geospatial methods. Human geography is concerned with the spatial aspects of politics, economics, and culture. Physical geographers study patterns of climates, land forms, vegetation, soils, and water. Human-environment geographers investigate the connections between the two, such as energy, water, and food systems, or the impacts of natural hazards on society. Geospatial methods are important tools for understanding our complex world, which include spatial analysis, Geographic Information Systems (GIS), remote sensing, and mapping platforms such as Google Earth.

To prepare students for many rewarding and important career opportunities, the Department of Geography, in the College of Science, offers a B.S. in Geography, Geographic information systems certificate, Climate change certificate, and a minor in Geography.

Students benefit from close contact with their instructors and hands-on experience within their course work and through internships with industries and agencies involved in geographic and cartographic applications.

Graduate Programs

M.S. and Ph.D. degrees in geography are offered. Geography graduate programs provide training in research methods and applications of theory and spatial modeling to problems in regional development, cartography, and the physical environment. Students learn problem definition, research design, and data analysis using a variety of techniques including GIS, remote sensing, spatial analysis, and computer assisted cartography. Students without an undergraduate degree in geography are usually required to complete some undergraduate courses in the department to provide adequate background.

Undergraduate Geospatial Information Systems Certificate

The GIS certificate is designed to serve students to enhance their educational foundation in geographical information systems (GIS) or to strengthen your GIS credentials is available through the GIS Certificate in the Department of Geography. GIS is the computer technology that uses digital information about earth surface features and location patterns to produce useful maps and analytical solutions to complex problems in physical, environmental, social, and economic sciences. Applications of GIS have expanded continuously during the past decade and GIS software has become very powerful, enabling complex problem solving in a wide variety of public and private sector settings worldwide.

A certificate program in geographic information systems is available in addition to our degree programs. Requirements for this program are listed in the website www.uidaho.edu/sci/geography.

Undergraduate Climate Change Certificate

There is a need for personnel who have a working knowledge of the science of climate change, its potential impacts, and adaptation and mitigation strategies to build climate resilient societies and landscapes.

Careers include scientists quantifying impacts, mitigation, and adaptation and practitioners and managers minimizing effects in natural and human systems.

A certificate program in Climate Change is available in addition to our degree programs. Requirements for this program are listed in the website www.uidaho.edu/sci/geography.

Career Opportunities

Geography and GIS applications continue to be one of the fast-growing job markets world-wide. Most jobs today involve the use and adaptation of geographic information systems in both the public and private sectors. Geographers also work in industry using their skills in research, locational analysis, site selection, mapping, and management of geographical information, with the aid of computers. Industrial jobs for geographers range from research, planning, and data management in primary resources to deciding where to locate a new supermarket or shopping mall. Many jobs for geographers involve computer mapping or GIS. Cartographers from our program are employed in a variety of positions working with map design, graphics, and production cartography, international employment with government agencies and NGOs, are increasing opportunities for geographers with the area studies and global systems option. Geographers are also employed in the public and private sector for jobs, which involve monitoring of air and water quality, management of natural resources and other environmental, and land management issues. The department arranges student internships with industries and agencies to provide on-the-job training and maintains a

close relationship with the UI Career Services Center to aid students in their search for employment.

Faculty members in the Geography department emphasize quantitative methods and rigorous problem formulation; and in addition, critical approaches and qualitative methods are employed. Geography faculty will answer questions about specific programs and courses. Prospective majors in Geography should contact the department office (phone 208-885-6216), or visit the department's website, www.uidaho.edu/sci/geography.

Majors

- Geography (B.S.) (p. 346)

Certificates

- Climate Change Undergraduate Academic Certificate (p. 346)
- Geographic Information Systems Undergraduate Academic Certificate (p. 346)

Geography Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Geography for all degree programs. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree. Scores on the Graduate Record Examination (aptitude section) are required for admission to all programs. Examples of the specialty areas in which the department can provide suitable depth and mentoring for graduate study include: Geographic Information Science, spatial analysis and modeling, remote sensing, polar atmospheres, glaciology, climate change mitigation and adaptation, global environmental change, business geography, rural and regional development, transportation systems.

- Geography (M.S.) (p. 347)
- Geography (Ph.D.) (p. 347)

Climate Change Undergraduate Academic Certificate

Code	Title	Hours
GEOG 313/513	Global Climate Change	3
Select three courses from the following:		9
GEOG 401	Climatology	
GEOG 411	Natural Hazards and Society	
GEOG 430	Climate Change Ecology	
GEOG 435	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
Seminar courses as approved by the department		
Total Hours		12

Courses to total 12 credits for this certificate

Geographic Information Systems Undergraduate Academic Certificate

Code	Title	Hours
GEOG 385	GIS Primer	3
GEOG 475	Intermediate GIS	3
Select 9 credits of electives from the following:		9
GEOG 390	Cartographic Design & Geovisualization	
GEOG 407/507	Spatial Statistics and Modeling	
GEOG 424/524	Hydrologic Applications of GIS and Remote Sensing	
GEOG 483/583	Remote Sensing/GIS Integration	
GEOG 479	GIS Programming	

Note: A grade of 'C' or higher is required in all coursework for this academic certificate.

Courses to total 15 credits for this certificate

Geography (B.S.)

This program is offered through the College of Science (p. 332). Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Note: Students must earn a grade of "C" or better in all Geography courses.

Code	Title	Hours
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing	
GEOG 100	Physical Geography	3
GEOG 100L	Physical Geography Lab	1
GEOG 165	Human Geography	3
GEOG 200	World Regional Geography	3
GEOG 313	Global Climate Change	3
GEOG 385	GIS Primer	3
GEOG 390	Cartographic Design & Geovisualization	3
GEOG 489	Capstone Preparation	1
GEOG 493	Senior Capstone in Geography	3
STAT 251	Statistical Methods	3
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
Select 3 credits from the following in human geography:		3
GEOG 330	Urban Geography	
GEOG 340	Business Location Decisions	
GEOG 345	Global Economic Geography	
GEOG 350	Geography of Development	
GEOG 360	Population Dynamics and Distribution	
GEOG 365	Political Geography	
Select 3 credits from the following in physical geography:		3
GEOG 301	Meteorology	
GEOG 401	Climatology	

GEOG 410	Biogeography	
GEOG 430	Climate Change Ecology	
Select one course from the following in human-environment interactions:		3
GEOG 411	Natural Hazards and Society	
GEOG 420	Land, Resources, and Environment	
GEOG 435	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
Select 6 additional credits in Geography courses, for a total minimum number of 36 credits in Geography		6
Total Hours		47-48

Courses to total 120 credits for this degree

Students interested in obtaining more depth in any of the departmental focus areas (Geographic Information Science (GIS), spatial analysis, physical science and the environment, regional/global development) are encouraged to discuss with their advisor recommended courses in Geography and other departments appropriate to those depth areas.

Geography (M.S.)

Master of Science. Major in Geography.

Thesis Option

Each student's training and research plan is developed by the student and the major professor with the advisory committee's approval. Admission is based on the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to serve as the student's mentor. A written thesis is required, but the thesis may be comprised of a manuscript in a form acceptable for publication in a refereed journal, while otherwise fulfilling the requirements of the Graduate College.

Master of Science. Major in Geography.

Non-thesis Professional Option

This program is designed for individuals who wish to place less emphasis upon research in their plan of study, but want to gain experience in applying their knowledge to a substantial project of an applied nature. Projects may be aligned with internships or other work experiences. The student's advisory committee will consist of two faculty members from the Department of Geography. Projects must be documented and presented according to guidelines in the department handbook and approved by the student's committee.

Geography (Ph.D)

Doctor of Philosophy. Major in Geography.

All general Ph.D. requirements apply. An M.S. degree is required. Admission is by faculty approval based on evaluation of the applicant's potential to carry out original research. Each student's training and research plan is developed by the student and the major professor with the advisory committee's approval. The advisory committee typically consists of three faculty members in the department and one faculty member from another department. Students are not allowed to register for dissertation credits (GEOG 600) until they have advanced to candidacy via successful completion of their preliminary examination. The dissertation must be of an original research nature and be in a topic spanned by the research interests and expertise of the major professor and committee members.

Department of Geological Sciences

Leslie Baker, Dept. Chair (203 McClure Bldg. 83844-3022; phone 208-885-6192; www.uidaho.edu/sci/geology).

Geology is the study of the origin and evolution of the earth, emphasizing the concepts of geologic time and plate tectonics. The applied aspects of geology include the search for hydrocarbons, ores, and water; the assessment of geologic hazards associated with earthquakes, volcanoes, and landslides; and the study of the global environment. Also included in these studies are geologic aspects of waste disposal and pollution abatement.

The bachelor's degrees offered in geology is one that emphasizes practical and field science along with theory. It is the goal of the department that our graduates not only be ready for immediate employment, but also that they have the broad education that will help them to grow professionally, be successful in graduate school, and advance through positions of greater responsibility during their careers.

The geology program provides the student with the necessary background courses in cognate sciences and mathematics plus a spectrum of courses in the sub-disciplines of geology. Specialized elective courses can be chosen to prepare for various careers such as exploration for minerals or petroleum, the search for and management of ground water, environmental geology, and earth science education.

A minor in geology is offered for students in allied fields who have an interest in geology. The minor curriculum can be tailored to meet the needs of individual students.

Research laboratories are equipped for work in applied economic geology, geochemistry, geochronology, geomechanics, geophysics, hydrogeology, mineralogy, paleontology, petrology, structural analysis, tectonics and volcanology. Laboratories are maintained for work in all of the basic courses, with large study collections of fossils, rocks, minerals, crystal models, ore suites, thin sections, polished sections, and topographic and geologic maps. Equipment used in advanced courses includes several sets of microscopes, photomicrographic apparatus, x-ray diffraction equipment, and a variety of instruments for geochemical analysis. Also available are computers, resistivity survey equipment, gravity meters, GPS receivers, seismographs, magnetometer, soil drilling and sampling kits, and water-level recorders.

The department offers Master of Science degrees in geology and hydrology. A thesis is required in the geology program, whereas a non-thesis option is available in hydrology. The Doctor of Philosophy is offered in geology.

The undergraduate preparation expected of the entering graduate candidates depends upon the degree sought. Some of our most promising graduate students have come to us with bachelor's degrees in other subjects. Deficiencies for master's candidates are determined by the major professor.

BSU-ISU Cooperative Programs

The department participates in cooperative programs with the Earth Science Departments at Boise State University and at Idaho State

University. Students interested in pursuing bachelor's degrees in geology at those institutions may take transferable preparatory courses at UI.

Majors

- Geological Sciences (B.S.) (p. 348)

Minors

- Geology Minor (p. 349)

Geological Sciences Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Geological Sciences. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree. All graduate students in this department are expected to attend the appropriate departmental seminar each semester.

- Geology (M.S.) (p. 349)
- Geology (Ph.D.) (p. 349)

Geological Sciences (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 317	Technical Writing	3
GEOG 385	GIS Primer	3
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
GEOL 249	Mineralogy and Optical Mineralogy	4
GEOL 290	Field Geology Methods	3
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOL 326	Igneous and Metamorphic Petrology	4
GEOL 345	Structural Geology	4
GEOL 422	Principles of Geophysics	4
GEOL 423	Principles of Geochemistry	3
GEOL 490	Geology Field Camp	3
Select one of the following:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Options		
Select one of the following options:		23-34
Physical Geology (p. 348)		
Environmental Hydrogeology (p. 348)		
Geological Education (p. 349)		
Total Hours		74-85

A. Physical Geology Option

Code	Title	Hours
GEOL 212	Principles of Paleontology	4
GEOL 335	Geomorphology	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
Select one of the following:		3-4
MATH 175	Calculus II	
MATH 330	Linear Algebra	
STAT 251	Statistical Methods	
Advisor Approved Electives in Geology		9
Total Hours		23-24

Courses to total 120 credits for this degree

B. Environmental Hydrogeology Option

Code	Title	Hours
GEOL 309	Ground Water Hydrology	3
GEOL 410	Techniques of Groundwater Study	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select one of the following:		4
PHYS 112 & 112L	General Physics II and General Physics II Lab	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Select two electives electives from the following:		6-8
GEOL 335	Geomorphology	
GEOL 344	Earthquakes and Seismic Hazards	
GEOL 361	Geology and the Environment	
GEOL 428	Geostatistics	
GEOL 431	Chemical Hydrogeology	
GEOG 301	Meteorology	
GEOG 401	Climatology	
HYDR 409	Quantitative Hydrogeology	
HYDR 412	Environmental Hydrogeology	
ENGR 360	Engineering Economy	
MATH 275	Calculus III	
MATH 310	Ordinary Differential Equations	
MATH 330	Linear Algebra	
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	
CHEM 275 & CHEM 276	Carbon Compounds and Carbon Compounds Lab	
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	
Total Hours		27-29

Courses to total 120 credits for this degree

C. Geological Education Option

Code	Title	Hours
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
GEOG 100	Physical Geography	3
GEOG 100L	Physical Geography Lab	1
GEOG 401	Climatology	3
GEOL 212	Principles of Paleontology	4
GEOL 335	Geomorphology	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
PHYS 103	General Astronomy	3
PHYS 104	Astronomy Lab	1
PLSC 205	General Botany	4
Select one of the following:		3-4
MATH 175	Calculus II	
MATH 330	Linear Algebra	
STAT 251	Statistical Methods	
Total Hours		33-34

Courses to total 120 credits for this degree

Geology (M.S.)

Master of Science. Major in Geology.

General M.S. requirements apply. Prerequisites are the equivalent of an undergraduate major in the area of specialization. A written thesis is required for which ten credits (of the minimum of 30 credits for the degree) are permitted.

Geology (Ph.D.)

Doctor of Philosophy. Major in Geology.

General Ph.D. requirements apply. Admission to the doctoral program is based on the compatibility of the student's research interests with those of the major professor, upon the availability of research support, and the student's academic record and potential. Applicants are expected to have the prerequisites as specified for the M.S. degree with a major in geology. Each research program is developed by the student and the major professor with the advisory committee's approval. Up to 45 credits are permitted in research and dissertation.

Geology Minor

Code	Title	Hours
Select one of the following sequences:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
Select 12 credits of electives in Geology:		12
Total Hours		20

Courses to total 20 credits for this minor

Department of Mathematics

Christopher Williams, Chair (300 Carol Ryrie Brink Hall 83844-1103; phone 208-885-6742; math@uidaho.edu; www.uidaho.edu/sci/math).

The Department of Mathematics offers a wide variety of majors and minors. In addition to the degree programs described below, many students pursue joint majors in mathematics and other disciplines that utilize mathematics. The most popular of these are mathematics/computer science and mathematics/physics. A joint major is obtained by completing the degree requirements for both majors. Minor programs are described below under "Undergraduate Curricular Requirements."

At the graduate level, the department offers the M.S., M.A.T., and Ph.D. degrees in mathematics. Graduate training in mathematics prepares students for careers in teaching or research and development. Employment opportunities include universities, colleges, industries, and government agencies. The Ph.D. is generally required for teaching and research at the university level. The M.S. qualifies students to teach at junior colleges, some four-year colleges, and for many positions in industry. The M.A.T. prepares students for secondary teaching and for some junior college positions. A baccalaureate degree in mathematics is generally required for admission to the graduate program; however, many students of science and technology can be admitted to the program with few undergraduate deficiencies.

The need for persons with quantitative skills is increasing dramatically as the world grows more complex. Mathematicians and statisticians have employment opportunities in business, industry, government, and teaching. Training in mathematics, with its emphasis on problem solving, analysis, and critical thinking, is excellent preparation for graduate programs in engineering, science, business, or law. In fact, persons planning careers in almost any field will find their opportunities enhanced by the study of mathematics and statistics. The programs are intended to provide students just such enhancement. It is generally the case that the person who develops his or her quantitative skills has increased ability to attack many of the complex problems of society. Advances in science, technology, the social sciences, business, industry, and government become more and more dependent on precise analysis and the extraction of information from large quantities of data. Environmental problems, for example, require careful analysis by persons (or teams of persons) with skills in mathematics, statistics, and computer science as well as in biology, geology, physics, and many other fields.

The demand for teachers of mathematics is greater now than ever before. Nearly every school district in the nation has a shortage of teachers trained in mathematics. UI offers a broadly based program leading to teacher certification, through enrollment either in the Department of Mathematics or in the College of Education and completion of a major or minor in mathematics.

Mathematics

The body of mathematical knowledge that has grown over the past 2,000 years is a magnificent human achievement, and it is growing more rapidly than ever before. The habits of systematic and creative thought developed in the study of mathematics are recognized as invaluable in most areas of human endeavor. University of Idaho's B.S. options in mathematics are designed to introduce the student to the excitement of mathematical ideas; they allow the maximum possible freedom

to explore those areas of mathematics that the student finds most interesting.

The department has a sound program in mathematics with a proven record of preparing students for successful graduate study at the very best universities in the nation. There are sequences of courses in calculus, advanced calculus, linear algebra, differential equations, number theory, abstract algebra, topology, geometry, statistics, complex analysis, combinatorics, and mathematical analysis. Students of mathematics who do not go to graduate school are well prepared for industrial, governmental, or teaching jobs if they have some additional exposure to computer science, education, or one of the natural, social, or applied sciences.

Applied Mathematics

Many of the greatest achievements in mathematics were inspired by problems in the natural sciences; today mathematics has wide application in both the natural and social sciences. Applied mathematics provides a broad arena for intellectual and creative impulses of people. The applied options in the mathematics B.S. degree allows a choice of the computation, mathematical biology, or quantitative modeling options. Each of these is discussed briefly below. Many students interested in applications of mathematics pursue a joint major in some other department.

Applied - Computation Option

The advent of computers has changed nearly every aspect of society. As computation has become both more important and more feasible, it has inspired the development of several fields of study within mathematics. The computation option of the applied mathematics degree provides training in the mathematics applicable to computer science and technology. Many students pursue this option jointly with a computer science major.

Applied - Mathematical Biology Option

Biology is undergoing an information revolution. Recent technological advances have created an avalanche of biological data and a quantification of biology that has transformed the subject. The manipulation, analysis and interpretation of large, complex datasets is now central to much of biology. Moreover, mathematical models of the dynamics of biological systems can now be put in contact with empirical work in a way that allows a true synthesis of theory and data. This option will provide the needed cross training required for success in careers in mathematical biology.

Applied - Quantitative Modeling Option

The role of modeling is essential in modern interdisciplinary research involving mathematics and the sciences. This option gives students an opportunity to learn about mathematical modeling with particular emphasis on the life sciences and the physical sciences. It provides an opportunity for students to create a very strong double major program and provides ideal preparation for future graduate training in the sciences.

Faculty members in the Department of Mathematics will be happy to answer questions about specific programs and courses. Such questions can also be addressed to the department chair (Brink 300; phone 208/885-6742).

Majors

- Mathematics (B.S.) (p. 350)

Minors

- Mathematics Minor (p. 352)

Mathematics Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Mathematics. See the College of Graduate Studies (p. 232) section for the general university requirements applicable to each degree.

- Mathematics (M.S.) (p. 352)
- Mathematics (M.A.T.) (p. 352)
- Mathematics (Ph.D.) (p. 352)

Mathematics (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 330	Linear Algebra	3
Options		
Select one of the following options:		36-54
General (p. 350)		
Applied - Computation (p. 351)		
Applied - Quanitative Modeling (p. 351)		
Applied - Mathematical Biology (p. 351)		
Total Hours		50-68

A. General Option

This is the traditional curriculum in Mathematics. It is more mathematically rigorous than the other options. It is especially good for secondary education majors and students intending to go to graduate school in Mathematics or other sciences.

Code	Title	Hours
Math Courses		
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 310	Ordinary Differential Equations	3
MATH 461	Abstract Algebra I	3
MATH 471	Introduction to Analysis I	3
Select one of the following:		3
MATH 430	Advanced Linear Algebra	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 462	Abstract Algebra II	
MATH 472	Introduction to Analysis II	
MATH 476	Combinatorics	
Select four math courses above 310		12

Supporting Courses		
STAT 301	Probability and Statistics	3
CS 112	Computational Thinking and Problem Solving	3
or CS 120	Computer Science I	
Total Hours		36

Courses to total 120 credits for this degree

B. Applied - Computation Option

The emphasis is on the mathematics related to computer science and technology. With a major or minor in computer sciences this is a good preparation for work in the computer industry.

Code	Title	Hours
Math Courses		
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 310	Ordinary Differential Equations	3
MATH 385	Theory of Computation	3
MATH 395	Analysis of Algorithms	3
MATH 415	Cryptography	3
MATH 428	Numerical Methods	3
or MATH 432	Numerical Linear Algebra	
MATH 452	Mathematical Statistics	3
or STAT 301	Probability and Statistics	
Select two additional courses from the following:		6
MATH 376	Discrete Mathematics II	
MATH 426	Discrete Optimization	
MATH 430	Advanced Linear Algebra	
MATH 432	Numerical Linear Algebra	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 461	Abstract Algebra I	
MATH 462	Abstract Algebra II	
MATH 476	Combinatorics	
Supporting Courses		
CS 120	Computer Science I	4
CS 121	Computer Science II	3
Total Hours		37

Courses to total 120 credits for this degree

C. Applied – Quantitative Modeling Option

The emphasis is on the mathematics used to model phenomena in engineering, science, business and economics. With a second major in one of these disciplines, this provides ideal preparation for graduate school.

Code	Title	Hours
Math Courses		
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 310	Ordinary Differential Equations	3
MATH 428	Numerical Methods	3
MATH 451	Probability Theory	3
MATH 437	Mathematical Biology	3
or MATH 438	Mathematical Modeling	
STAT 301	Probability and Statistics	3
or MATH 452	Mathematical Statistics	
Select three additional courses from the following:		9
MATH 371	Mathematical Physics	
MATH 376	Discrete Mathematics II	
MATH 415	Cryptography	
MATH 420	Complex Variables	
MATH 426	Discrete Optimization	
MATH 432	Numerical Linear Algebra	
MATH 438	Mathematical Modeling	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 471	Introduction to Analysis I	
MATH 472	Introduction to Analysis II	
MATH 476	Combinatorics	
MATH 480	Partial Differential Equations	
Quantitative Electives		
Select 6 credits of advisor-approved quantitative electives in Science, Engineering, Business, Economics, etc.		6
Supporting course		
CS 120	Computer Science I	4
Total Hours		40

Courses to total 120 credits for this degree

D. Applied - Mathematical Biology Option

This option offers training across Mathematics and Biology and provides the background to pursue a career in technical industries and to obtain graduate degrees in Biomathematics, Biostatistics, and Bioinformatics.

Code	Title	Hours
Math and Statistics Courses		
MATH 437	Mathematical Biology	3
MATH 451	Probability Theory	3
MATH 452	Mathematical Statistics	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select two courses from the following:		6
MATH 310	Ordinary Differential Equations	
MATH 453	Stochastic Models	
STAT 431	Statistical Analysis	
Select two courses from the following:		6
MATH 428	Numerical Methods	
MATH 430	Advanced Linear Algebra	
MATH 480	Partial Differential Equations	
Biology Courses		
BIOL 114	Organisms and Environments	4
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 310	Genetics	3
BIOL 456	Computer Skills for Biologists	3

Select 12 Credits Upper Division Biology courses		12
Supporting Courses		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
Total Hours		54

Courses to total 120 credits for this degree

Mathematics (M.A.T.)

Master of Arts in Teaching. Major in Mathematics.

General M.A.T. requirements apply. Under advisement of the major professor and committee, a broadly based study plan is designed taking into consideration the candidate's interests and teaching needs. The plan should include mathematics courses from several pure mathematics areas, for example, algebra, topology, analysis, geometry, and number theory. A three-hour written examination is given over the courses in the study plan. Students entering the M.A.T. program will be considered deficient if they have not completed a standard sequence in calculus (equivalent to MATH 170-MATH 175-MATH 275).

The M.A.T. degree in mathematics may also be obtained via distance learning. This distance learning program is designed to meet the needs of in-service teachers. The requirements outlined above apply, but here the study plan is designed using courses that are available by video or in summer programs on-campus or at off-campus sites.

Mathematics (M.S.)

Master of Science. Major in Mathematics.

An undergraduate major in mathematics or its equivalent is a prerequisite. There is both a thesis and a non-thesis option. Both options have the same credit requirements. Of the minimum of 30 credits required for this degree, at least 18 credits must be in mathematics at the 500 level (excluding MATH 500, MATH 599, seminars, and directed study); the remaining 12 credits may include 400 and 500 level courses in mathematics, and 300 or 400 level courses in supporting areas. Mathematics Education (MTHE) credits may not be counted. For the non-thesis option a three-hour comprehensive written examination covering 6 mathematics courses chosen by the student (with at least 5 at the 500 level) is required. For the thesis option, the student writes a thesis (which may be expository in nature) under the guidance of a thesis committee. A final examination in the form of an oral defense of the thesis is required.

Mathematics (Ph.D.)

Doctor of Philosophy. Major in Mathematics.

In addition to the general university requirements for the Ph.D., the department requires that 36 credits of graduate-level mathematics (excluding MATH 500, MATH 510, MATH 599, MATH 600, seminars, and directed study) be completed or transferred (with at least 18 credits completed at UI).

The preliminary examination must be passed no later than the end of the student's fourth year of graduate study and before the dissertation is started. The preliminary examination is composed of three parts covering the areas algebra, analysis, and one of topology, combinatorics, or differential equations. These are given all in a one-week period and are graded by a departmental committee that may recommend additional testing in one or more of the specific areas if satisfactory results are not obtained. The committee may also recommend an oral examination in certain areas by the supervisory committee.

The dissertation must be of an original research nature and be in an area spanned by the research interests of the major professor. A final examination that amounts to a defense of the dissertation is required. Acceptability of the dissertation is to be determined by the student's major professor and graduate committee.

Mathematics Minor

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
Select 6 Math courses from the following:		18
MATH 275	Calculus III	
STAT 301	Probability and Statistics	
Math Courses numbered 303-499		
Total Hours		26

Courses to total 26 credits for this minor

Department of Physics

Physics is the scientific study of the nature and behavior of matter and energy. On the basis of quantitative observations, physicists develop theories to describe the observed behavior. Further experiments and observations are used to verify or refine the theories. The scientific method demands logical and mathematical rigor. The wealth of applications of physics to technology appeals to pragmatic persons, yet physics has much greater similarity to the arts and humanities than is commonly realized, because of the intellectual curiosity and creativity on which it is built.

The physics program at UI introduces students in technical and non-technical curricula alike to the scientific method and to physical laws. The B.A. and B.S. curricula in physics emphasize a broad liberal-arts education and the core subjects in physics. Many B.A. and B.S. recipients go on to graduate study in physics or related disciplines.

Training in the theory, history, and philosophy of physics is provided by the required core courses and electives in most of the major areas of specialization. Formal laboratory courses and directed research familiarize students with experimental techniques, modern instrumentation, and computers. Equipment in the department's research laboratories includes low-temperature, strong magnetic field, high-vacuum, and vapor deposition facilities, electron and atomic beam apparatus, plasma devices, various lasers, spectrometers, optical telescopes, and nuclear radiation detectors. All offices, laboratories, and classrooms have computer network connections. The program is supported by a machine shop and a computer services shop. Collaborations with other universities and research institutes provide access to an even wider range of facilities.

The department offers graduate curricula leading to the M.S. and Ph.D. degrees. A bachelor's degree in physics is normally required as preparation for graduate study. Students with a bachelor's degree in

another physical science, engineering, or mathematics will generally qualify after removal of a few upper-division-level deficiencies.

Research in the Department of Physics emphasizes the areas of condensed matter physics, nuclear physics, atomic physics, astrophysics, and biophysics. In addition, there is an interest in research on physics teaching.

The M.S. is not a prerequisite for the Ph.D., but beginning doctoral students may earn the M.S. if they wish. General departmental course requirements exist for the M.S. and Ph.D. degrees, in addition to the general requirements of the Graduate College. Other course requirements are specified in the student's study plan, developed by the student and his or her advisor and approved by the student's supervisory committee. All graduate students are encouraged to gain some teaching experience during the course of their graduate studies.

Physics Department Statement of Objectives

Undergraduate Program

Our goal is to provide students with a qualitative and quantitative understanding of the core topics in theoretical physics: classical mechanics, electricity and magnetism, modern physics, quantum mechanics, thermal physics, and mathematical methods, as well as a familiarity with the experimental techniques on which advances in physics are based. In addition, it is expected that each student will develop a more detailed knowledge of several special areas in physics such as atomic and molecular physics, nuclear and particle physics, classical optics and quantum optics, solid state physics, astronomy, relativity and computational physics.

In the process of developing specific knowledge of areas in physics, students will learn to analyze physical phenomena using basic physical principles and acquire skills in: basic logic and reasoning, mathematics and computation, problem solving, experimental technique, and oral and written communication.

Students completing the undergraduate program should be well prepared for further study at the graduate level or to apply their skills successfully in other professional settings. They will be able to communicate effectively orally and in writing either with co-workers in a team effort, or with non-scientists in public discussions of scientific issues

Graduate Program

In the graduate program we aim to deepen a student's basic knowledge and understanding of theoretical and experimental physics, as well as to guide him or her to achieving expert status in a particular area of contemporary interest to the physics community. By carrying out a research project in collaboration with a major-professor acting as mentor, the student will develop the skills required to initiate, and carry to completion, an independent research program upon obtaining an advanced degree.

Faculty members in the department will be happy to discuss programs in detail with interested persons. Requests for information or a tour of the facilities can be made by a letter, e-mail, or telephone call (208-885-6380) to the department.

Majors

- Physics (B.S.) (p. 353)
- Physics (B.A.) (p. 353)

Minors

- Physics Minor (p. 356)

Physics Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Physics. See the College of Graduate Studies (p. 232) section for the general requirements applicable to each degree.

- Physics (M.S.) (p. 354)
- Physics (Ph.D.) (p. 355)

Physics (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CS 120	Computer Science I	4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 200	Physics Seminar	1
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
PHYS 321	Analytical Mechanics	3
PHYS 341	Electromagnetic Fields I	3
Select 11 credits of Upper-Division Physics courses		11
Select 6 credits of Upper-Division Mathematics courses		6
Select one upper-division Humanities course [1]		3
Select one upper-division Social Science course [1]		3
Select any upper-division course approved by student's advisor		4
Total Hours		72

Courses to total 120 credits for this degree

[1] *In addition to the minimum university-wide general education requirements.*

Physics (B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CS 120	Computer Science I	4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
PHYS 200	Physics Seminar	1
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
PHYS 321	Analytical Mechanics	3
PHYS 341	Electromagnetic Fields I	3
PHYS 351	Introductory Quantum Mechanics I	3
Emphases		
Select one of the following emphases:		24-35
General Physics (p.)		
Applied Physics (p.)		
Total Hours		78-89

A. General Physics Emphasis

Code	Title	Hours
PHYS 333	Statistical Thermodynamics	3
PHYS 342	Electromagnetic Fields II	3
PHYS 371	Mathematical Physics	3
Select 15 credits of Physics electives numbered 400 or above, including at least 4 credits of lab and 9 credits of non-lab courses		15
Total Hours		24

Courses to total 120 credits for this degree

B. Applied Physics Emphasis

Code	Title	Hours
PHYS 411	Advanced Physics Lab	4
Select 4 credits from the following:		4
PHYS 490	Research	
PHYS 492	Senior Research	
Select 27 credits of Physics and Engineering electives including 21 credits from the following: [1]		27
ECE 350 & ECE 351	Signals and Systems I and Signals and Systems I Lab	
ECE 460	Semiconductor Devices	
ECE 462	Semiconductor Theory	
ENGR 210	Engineering Statics	
ENGR 240	Introduction to Electrical Circuits	
ENGR 335	Engineering Fluid Mechanics	
ENGR 350	Engineering Mechanics of Materials	
ME 301	Computer Aided Design Methods	
ME 412	Gas Dynamics	
ME 413	Engineering Acoustics	
ME 420	Fluid Dynamics	
MSE 201	Elements of Materials Science	
MSE 313	Physical Metallurgy	
MSE 427	Ceramics Materials	
MSE 464	Materials Physics and Engineering	
PHYS 333	Statistical Thermodynamics	
PHYS 407	Communicating Science	
PHYS 428	Numerical Methods	
PHYS 438	Biological Physics	
PHYS 443	Optics	
PHYS 464	Materials Physics and Engineering	
PHYS 490	Research	
PHYS 492	Senior Research	
Total Hours		35

Courses to total 120 credits for this degree

1 At least 21 credits from upper-division courses and at least 9 credits must be 400-level

Physics (M.S.)

Master of Science. Major in Physics. (Non-thesis Option)

General M.S. non-thesis requirements apply.

The requirement is a minimum of 30 credits in coursework and the credits must be distributed as follows:

Code	Title	Hours
Physics Courses Numbered 500 and higher [1]		20
Courses Numbered 400 and higher [2]		10
Required Courses [3]		
PHYS 521	Advanced Mechanics	
PHYS 533	Statistical Mechanics	
PHYS 541	Electromagnetic Theory I	
PHYS 542	Electromagnetic TheoryII	
PHYS 550	Quantum Mechanics I	
Total Hours		30

Courses to total 30 credits for this degree

1 *(including 2 cr for* PHYS 501 Seminar *and no more than three credits from* PHYS 599 Research*)*

2 *These may be non-physics courses upon the approval of the physics department Academic Standards Committee.*

3 Included in the 30 minimum credits

Students must pass a comprehensive examination, which must be taken at the first offering after the student has completed the core courses required for the M.S. degree. Full-time students may not delay the completion of their core course requirements by avoiding the taking of

a core course when offered except with the prior written consent of the Academic Standards Committee and the student's major professor. The examination is written and covers all of general graduate-level physics as defined by the required courses for the M.S. degree. Typically, it will be administered on two different days, with a time limit of approximately three hours for each day. The results of the examination will be evaluated by the physics faculty. If the comprehensive examination is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three nor more than 14 months following the first attempt.

Master of Science. Major in Physics. (Thesis Option)

General M.S. requirements for a degree with thesis apply. The student must complete a total of at least 30 credits at 400 level or higher, 20 of which must be at the graduate level, including a maximum of 10 credits in research and thesis, with no mare than three of these credits from PHYS 599. Specific departmental graduate course requirements are 2 credits in PHYS 501 and PHYS 521, PHYS 541, PHYS 542 and PHYS 550. If a student's undergraduate preparation is considered deficient (e.g., if it lacks laboratory experience at the upper-division level), then certain undergraduate courses will be required in the study plan. Such remedial credits are not to be counted towards the total required for the degree. No departmental comprehensive exam is required.

A final defense of the M.S. thesis is scheduled upon completion of the thesis. The candidate is required to defend his or her work and show a satisfactory knowledge of the field in which the thesis research has been performed. The defense is oral and would typically last for one hour. The exam has to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

A typical study plan would include 40 to 50 credits of course work at the 500 level in physics and about 30 credits in research and thesis. The study plan also would include at least six units of upper-division or graduate course work outside of physics. The nature and number of these additional units will depend upon the professional goals of the individual student. In planning a program, the student should consult with the departmental Academic Standards Committee for approval of any particular choice of nonphysics course work. The Ph.D. degree in physics is primarily a recognition of ability and accomplishment in research. The purpose of the course work is to provide the factual and theoretical background for research. Successful completion of course work is not in itself considered as completion of the major requirement for the degree.

All Ph.D. graduate students are required to enroll in Seminar each semester while in residence.

No formal foreign language requirement exists for Ph.D. candidates; however, in individual cases, depending on the research topic, a reading knowledge in one foreign language may be required by the thesis advisor.

A two-Part preliminary examination is required. Part I is taken after the student has completed the courses required for the Ph.D. degree. Full-time students must take this exam no later than 2 years after entering the Ph.D. program. Students who have earned a masters degree in physics or wish to transfer credits to satisfy any of the departmental requirements (PHYS 521, PHYS 533, PHYS 541, PHYS 542, PHYS 550, PHYS 551, PHYS 571) may be required by the Academic Standards Committee to take the exam earlier. The examination is written and covers all of general graduate-level physics as defined by the required courses for a Ph.D. degree. Typically, it will be administered on two different days, with a time limit of approximately five hours for each day. The results of the examination will be evaluated by the physics faculty. If the preliminary examination, Part I, is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months nor more than 14 months following the first attempt.

Part II of the preliminary examination is set by the major professor of the Ph.D. student for a date within the second semester after Part I has been passed. The student is required to explain the goals of his or her planned Ph.D. research to the thesis committee and show general familiarity with the fields relevant for the research. Part II is oral and would typically last for one hour. The exam is to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. The student's committee certifies to the Graduate College the results of the preliminary examinations. Upon passing, the student is advanced to candidacy for the Ph.D. degree. If Part II is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months nor more than one year following the first attempt.

A final defense of the Ph.D. thesis is scheduled upon completion of the dissertation. The candidate is required to defend his or her work and show a superior knowledge of the field in which the thesis research has been performed. The defense is oral and would typically last for one hour. The exam is to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

Physics (Ph.D.)

Doctor of Philosophy. Major in Physics.

General Ph.D. requirements apply. Correspondence concerning the student's specific goals is encouraged in the preliminary planning of the Ph.D. program.

Specific departmental course requirements are:

Code	Title	Hours
PHYS 501	Seminar (Must enroll each semester)	2
PHYS 521	Advanced Mechanics	3
PHYS 533	Statistical Mechanics	3
PHYS 541	Electromagnetic Theory I	3
PHYS 542	Electromagnetic TheoryII	3
PHYS 550	Quantum Mechanics I	3
PHYS 551	Quantum Mechanics II	3
PHYS 571	Mathematical Methods of Physics	3
At least nine additional semester-hours of Physics courses at the 500 level [1]		9
Total Hours		32

[1] At Least Nine Additional Semester-Hours of Physics Courses at the 500 Level. Can include at most three credits of PHYS 599 Research.

A typical study plan would include 40 to 50 credits of course work at the 500 level in physics and about 30 credits in research and thesis. The study plan also would include at least six units of upper-division or graduate course work outside of physics. The nature and number of these additional units will depend upon the professional goals of the individual student. In planning a program, the student should consult with the departmental Academic Standards Committee for approval of any particular choice of nonphysics course work. The Ph.D. degree in physics is primarily a recognition of ability and accomplishment in research. the purpose of the course work is to provide the factual and theoretical background for research. Successful completion of course work is not in itself considered as completion of the major requirement for the degree.

All Ph.D. graduate students are required to enroll in PHYS 501 each semester while in residence.

No formal foreign language requirement exists for Ph.D. candidates; however in individual cases, depending on the research topic, a reading knowledge in one foreign language may be required by the thesis advisor.

A two-Part preliminary examination is required. Part I is taken after the student has completed the courses required for the Ph.D. degree. Full-time students must take this exam no later than 2 years after entering the Ph.D. program. Students who have earned a masters degree in physics or wish to transfer credits to satisfy any of the departmental requirements (PHYS 521, PHYS 533, PHYS 541, PHYS 542, PHYS 550 Quantum Mechanics I, PHYS 551, or MATH 571 Mathematical Methods of Physics) may be required by the Academic Standards Committee to take the exam earlier. The examination is written and covers all of general graduate-level physics as defined by the required courses for a Ph.D. degree. Typically, it will be administered on two different days, with a time limit of approximately five hours for each day. The results of the examination will be evaluated by the physics faculty. If the preliminary examination, Part I, is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months nor more than 14 months following the first attempt.

Part II of the preliminary examination is set by the major professor of the Ph.D. student for a date within the second semester after Part I has been passed. The student is required to explain the goals of his or her planned Ph.D. research to the thesis committee and show a general familiarity with the fields relevant for the research. Part II is oral and would typically last for one hour. The exam is to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. The student's committee certifies to the Graduate College the results of the preliminary examinations. Upon passing, the student is advanced to candidacy for the Ph.D. degree. If Part II is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months nor more than one year following the first attempt.

A final defense of the Ph.D. thesis is scheduled upon completion of the dissertation. The candidate is required to defend his or her work and show a superior knowledge of the field in which the thesis research has been performed. The defense is oral and would typically last for one hour. The exam is to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

Physics Minor

Code	Title	Hours
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
or ENGR 210	Engineering Statics	
Select 9 credits of Physics electives numbered 300 or above: [1]		9
Total Hours		20

Courses to total 20 credits for this minor

[1] *(usual prerequisites are* MATH 170 Calculus I, MATH 175 Calculus II, MATH 275 Calculus III)

Pre-Health Professions Studies

Mark J. Nielsen, Associate Dean (321 Mines Bldg; 208-885-6195, www.uidaho.edu/sci; science@uidaho.edu)

The minor in Pre-Health Professions Studies is administered by the College of Science (p. 332).

Minors

- Pre-Health Professions Studies Minor (p. 356)

Pre-Health Professions Studies Minor

Most health professions schools do not require a specific degree for admission. Instead, students are encouraged to select a major in an area that reflects their interests and aptitude, and then simultaneously complete prerequisite coursework for admission to their school(s) of choice. The Pre-Health Professions minor includes coursework that most health professions schools will expect applicants to have completed prior to admission. Requirements do vary between programs; therefore, students should be certain to check specific requirements at their schools of most interest.

Code	Title	Hours
PSYC 101	Introduction to Psychology	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select one of the following sequences:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory [1]	
Select at least 10 credits from the following:		10
BIOL 114	Organisms and Environments	
BIOL 115 & 115L	Cells & the Evolution of Life and Cells and the Evolution of Life Laboratory	

BIOL 120	Human Anatomy	
BIOL 121	Human Physiology	
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	
CHEM 277	Organic Chemistry I	
CHEM 278	Organic Chemistry I: Lab	
ENGL 317	Technical Writing	
PHYS 111 & 111L	General Physics I and General Physics I Lab [2]	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I [2]	
Total Hours		20

Courses to total 20 credits for this minor

1 CHEM 111: *Strongly encouraged as most health professions schools require general chemistry for science majors.*

2 PHYS 111/PHYS 111L, PHYS 211/PHYS 211L: *May be used towards the completion of this minor.*

Department of Statistical Science

Christopher Williams, Chair (415A Carol Ryrie Brink Hall 83844-1104; phone 208-885-2929).

Statistics is the science of developing and implementing methods for collecting, analyzing, interpreting, and presenting empirical data. Statisticians are in demand in virtually every field to understand information, from both large and small data sets. Societal benefits accrue from the proper collection and accurate reporting of data, and being able to clearly report information to citizens and stakeholders.

Bachelor of Science Program

The Department of Statistical Science offers the B.S. degree in Statistics with a General option and an option in Actuarial Science and Finance.

General Option

The General Option includes course work in designing and analyzing experiments, planning and interpreting surveys, and exploring relationships among variables. The field of Statistics is a major part of the emerging area of Data Science, and the General Option includes coursework in computing that is another major aspect of this area. This option includes flexibility to allow the student to emphasize different aspects of Statistics such as statistical theory, computing, or application to specialized fields such as the sciences, engineering, agriculture, natural resources, or business.

Actuarial Science and Finance Option

An actuary applies mathematics and statistics to forecasting problems. Actuaries are employed by financial institutions, government, insurance companies, and international corporations. They address problems as diverse as economic fluctuations, population demographics, resource consumption, medical insurance rates, and retirement needs. Actuaries are in great demand and have many interesting career opportunities often leading to high-level management positions. Admission to the actuarial profession is governed by a series of examinations administered by the actuarial societies. The first two examinations can be taken by undergraduates and are given locally, while the remaining exams are usually taken while working in the industry. Our Actuarial Science and Finance Option, review seminars, and summer internship program with actuarial companies prepare students for these exams.

Statistics Minor

A minor in Statistics is offered for students who have an interest in the field. The minor consists of 22 credits of coursework in Statistics, Mathematics, and related fields.

Graduate Programs

The department offers the Master of Science degree in Statistics. Graduate study in statistics is designed for two types of students. Students whose undergraduate degrees are in subject matter disciplines will prepare for a career involving the application of statistical methods to their particular area of interest. Students with degrees in mathematics, computer science, or similar areas will prepare for a career in data analysis, statistical computing, teaching of introductory-level statistics, or to pursue the Ph.D. degree.

Certificate Programs.

Graduate certificate programs are available both in Statistics and also Data Analytics. Information about these programs are listed on our website http://www.uidaho.edu/sci/stat/academics.

Faculty members in the Department of Statistical Science will be happy to answer questions about specific programs and courses. Such questions can also be addressed to the department chair (Brink 415A; phone 208/885-2929; email stat@uidaho.edu).

Majors

- Statistics (B.S.) (p. 358)

Minors

- Statistics Minor (p. 359)

Statistical Science Graduate Program

- Statistics Science (M.S.) (p. 358)
- Data Analytics Graduate Academic Certificate (p. 357)
- Statistics Academic Graduate Certificate (p. 359)

Data Analytics Graduate Academic Certificate

Code	Title	Hours
Select one of the following:		3
CS 472	Evolutionary Computation	
CS 475	Machine Learning	
BCB 510	Computational Science for Biologists	
BCB 511	Applied Bioinformatics	
OM 439	Systems and Simulation	
OM 456	Quality Management	
MKTG 431	Marketing Analytics	
STAT 507	Experimental Design	
STAT 519	Multivariate Analysis	
STAT 565	Computer Intensive Statistics	
CS 479	Data Science	3
MIS 455	Data Management for Big Data	3

STAT 517	Statistical Learning and Predictive Modeling	3
Total Hours		12

Courses to total 12 credits for this certificate.

Note: at least half of the credits must be at the graduate level.

Statistical Science (M.S.)

Master of Science. Major in Statistical Science.

Students seeking admission to the MS program in Statistical Science should have completed at least two semesters in college calculus comparable to MATH 170 and MATH 175, and two classes in applied statistics including STAT 431 or a comparable course. Familiarity with programming is expected, and familiarity with numerical or statistical computing environments is desirable. Students are not required to have an undergraduate degree in statistics.

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Statistical Science. See the College of Graduate Studies (p. 232) section for the applicable general requirements for M.S. degree.

An individual graduate program is tailored for the student, but all students must complete a basic core requirement of 24 credits and either

1. thesis (STAT 500[1]),
2. an internship report (STAT 598), or
3. a consulting option or course (6 credits of STAT 597). Credits from STAT 431 will not count toward the degree.

Code	Title	Hours
Core Requirements		
STAT 422	Sample Survey Methods	3
STAT 451	Probability Theory	3
STAT 452	Mathematical Statistics	3
STAT 501	Seminar	1
STAT 507	Experimental Design	3
STAT 519	Multivariate Analysis	3
STAT 550	Regression	3
STAT 565	Computer Intensive Statistics	3
STAT 597	Consulting Practicum	2
Total Hours		24

[1] A maximum of 6 credits of STAT 500 Master's Research and Thesis may be counted toward the thesis degree option.

Statistics (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 91)) and:

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 330	Linear Algebra	3
Select one of the following options:		39-58
General (p. 358)		
Actuarial Science and Finance (p. 358)		
Total Hours		53-72

A. General Option

Code	Title	Hours
STAT 301	Probability and Statistics	3
STAT 407	Experimental Design	3
STAT 422	Sample Survey Methods	3
STAT 431	Statistical Analysis	3
STAT 436	Applied Regression Modeling	3
STAT 451	Probability Theory	3
STAT 452	Mathematical Statistics	3
Select two of the following:		6
CS 120	Computer Science I	
STAT 426	SAS Programming	
STAT 427	R Programming	
Other approved courses		
Select 12 credits from the following:		12
CS 479	Data Science	
MATH 310	Ordinary Differential Equations	
MATH 428	Numerical Methods	
MATH 437	Mathematical Biology	
MATH 438	Mathematical Modeling	
MATH 471	Introduction to Analysis I	
MIS 455	Data Management for Big Data	
STAT 456	Quality Management	
STAT 514	Nonparametric Statistics	
STAT 517	Statistical Learning and Predictive Modeling	
STAT 535	Introduction to Bayesian Statistics	
Total Hours		39

Courses to total 120 Credits for this degree

B. Actuarial Science and Finance Option

Code	Title	Hours
Math Courses		
MATH 310	Ordinary Differential Equations	3
MATH 451	Probability Theory	3
MATH 452	Mathematical Statistics	3
400-Level Math Courses:		9
Three additional courses chosen from Math courses numbered 400 and above. May include Stat 422.		
Supporting Courses		12
ACCT 201	Introduction to Financial Accounting	
ACCT 202	Introduction to Managerial Accounting	
FIN 301	Financial Resources Management	
STAT 431	Statistical Analysis	
BUS 339	Spreadsheet Modeling	1-3
or STAT 426	SAS Programming	
CS 112	Computational Thinking and Problem Solving	3-4

or CS 120	Computer Science I	
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
STAT 433	Econometrics	3
or STAT 550	Regression	
Select one of the following:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select three courses selected from the following:		7-9
ECON 351	Intermediate Macroeconomic Analysis	
ECON 352	Intermediate Microeconomic Analysis	
FIN 302	Intermediate Financial Management	
FIN 381	International Finance	
FIN 408	Security Analysis	
FIN 463	Portfolio Management	
FIN 464	Derivatives and Risk Management	
FIN 465	Introduction to Market Trading	
FIN 469	Risk and Insurance	
MATH 455	Applied Actuarial Science	
Total Hours		51-58

Courses to total 120 credits for this degree

Statistics Academic Graduate Certificate

STAT 431 or similar course preparation must be completed prior to pursuing this academic certificate. At least half of the credits used for this certificate must be at the 500-level.

Code	Title	Hours
STAT 422	Sample Survey Methods	3
or STAT 507	Experimental Design	
Select courses from the following:		9
STAT 451	Probability Theory	
STAT 452	Mathematical Statistics	
STAT 514	Nonparametric Statistics	
STAT 519	Multivariate Analysis	
STAT 555	Statistical Ecology	
STAT 565	Computer Intensive Statistics	
Total Hours		12

Courses to total 12 credits for this certificate

Statistics Minor

Code	Title	Hours
STAT 422	Sample Survey Methods	3
STAT 431	Statistical Analysis	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select three courses from the following:		9
MKTG 421	Marketing Research & Analysis	
MATH 330	Linear Algebra	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
STAT 433	Econometrics	
STAT 456	Quality Management	
STAT 514	Nonparametric Statistics	
STAT 519	Multivariate Analysis	
Total Hours		22

Courses to total 22 credits for this minor

CONTINUING EDUCATION

The University of Idaho offers a variety of courses for individuals to continue their education whether in Moscow or not. Continuing education courses fall into three categories:

1. conferences, courses, seminars, or workshops offered by academic departments;
2. credit and non-credit courses offered by the Engineering Outreach Program; and
3. Independent Study in Idaho courses. All are explained below.

Courses Offered by Academic Departments

Several academic departments offer conferences, courses, seminars, and workshops throughout the region where students can earn UI credit or Continuing Education Units (CEU) (see regulation D-5 for information on CEU's). These conferences, courses, seminars, or workshops are taught by UI faculty members or by qualified local instructors who are approved by the respective college in which the course is offered.

Students earning UI credit for these conferences, courses, seminars, and workshops must be admitted by the UI Admissions Office; students earning CEU's do not. In most cases, registration and payment is done at the initial class session of the conference, course, seminar, or workshop. In some cases, advance registration is necessary.

Each college and department is responsible for developing and administering these courses as well as registering students. Those interested in taking such courses should contact the respective college for courses available in their geographic area.

COOPERATIVE PROGRAMS

The university participates in a number of cooperative arrangements in the state and region to extend resources and take advantage of special facilities.

Associated Western Universities Program

The university is a member of Associated Western Universities, which is a cooperative venture of certain institutions to make use of national laboratories located in the west. Financial support is available from the U.S. Department of Energy for graduate students and faculty to spend periods of time, up to one year, pursuing research projects at a number of these laboratories.

Cooperative Programs with Other Universities

Located only eight miles apart, the University of Idaho and **Washington State University**, in order to take advantage of unique strengths of each institution, have for some time operated a cooperative graduate and undergraduate course program. Courses available on either campus are identified in departmental listings, and offerings are listed in the *Class Schedule*. In addition, the two schools cooperate in programs in medicine, veterinary medicine, and food science and technology.

In 2002, the University of Idaho, in cooperation with **Lewis Clark State College** located in Lewiston, Idaho, began offering cooperative courses in Nez Perce language. Courses available on either campus are identified in departmental listings, and offerings are listed in the *Class Schedule* .

ENGINEERING OUTREACH PROGRAM

Barry Willis, Associate Dean for Outreach, College of Engineering (875 Perimeter Dr MS 1014, Moscow ID 83844-1014; phone 208-885-6373; eo.uidaho.edu; outreach@uidaho.edu).

The Engineering Outreach (EO) program began in 1975 to meet the educational needs of Idaho's just-developing high-tech industry. EO's first courses were delivered on videotape to regional corporations and educational centers.

Today, EO delivers courses online in engineering and various academic disciplines to students worldwide each semester. In-class sessions are recorded in high definition and encoded in a high-resolution MP4 format. Sessions are viewed online by students through a secure web portal. Engineering Outreach study options include master's degrees, academic certificates, and non-degree coursework for transfer credit, background study, and professional education. Engineering Outreach also delivers a variety of undergraduate courses; however, students cannot earn an entire undergraduate degree at a distance through the program.

Master's Degree Programs

Engineering Outreach delivers courses for the master's degrees listed below. All required coursework may be completed at a distance, although most students visit the campus near the end of their program to take a comprehensive exam or defend a thesis.

- Civil Engineering (M.Engr.)
- Computer Engineering (M.S., M.Engr.)
- Computer Science (M.S.)
- Electrical Engineering (M.S., M.Engr.)
- Engineering Management (M.Engr.)
- Geological Engineering (M.S.)
- Mathematics (M.A.T.)
- Mechanical Engineering (M.Engr.)
- Statistical Science (M.S.)
- Technology Management (M.S.)

Academic Certificates

Academic certificates provide opportunities for professional advancement and build a strong foundation for future graduate study. EO course delivery is available for the following certificates:

- Analog Integrated Circuit Design
- Power System Protection and Relaying
- Process & Performance Excellence
- Secure and Dependable Computing Systems
- Statistics

Academic regulations included in this catalog are applicable to all courses delivered by EO. For more information about Engineering Outreach, see How EO Works (eo.uidaho.edu/how-eo-works).

GLOBAL STUDENT SUCCESS PROGRAM

Andrew Brewick, Executive Director; www.uidahoglobal.com (http://www.uidahoglobal.com)

Established in 2017, the University of Idaho Global Student Success Program is designed for international students who need additional academic and/or English language support to gain entry to a bachelor's or master's degree program. Students in the GSSP complete academic coursework alongside American students while accessing additional student support to help them adjust to life in the United States.

Upon successful completion of the program, undergraduate students will move directly into the second year of their undergraduate degree program and graduate students will have accumulated 12 academic credits toward their master's degree program at the University of Idaho.

Undergraduate students focus their studies in the following academic colleges:

- Agricultural and Life Sciences
- Business and Economics
- Engineering
- Letters, Arts, and Social Sciences
- Education, Health, and Human Sciences
- Art and Architecture
- Science
- Natural Resources

Graduate GSSP subject areas include:

- Accountancy
- Applied Economics
- Architecture
- Computer Science
- Engineering
- Law
- Natural Resources

Application Process

Students interested in the GSSP should apply directly to the GSSP program: www.uidahoglobal.com/apply (http://www.uidahoglobal.com/apply). Undergraduate applicants must have a minimum 2.0 GPA or equivalent (visit www.uidahoglobal.com/admission-requirements (http://www.uidahoglobal.com/admission-requirements) for country by country scales) and an IELTS score of 5.0 or higher; graduate applicants must have a minimum 2.5 GPA or equivalent and an IELTS score of 6.0 or higher. English language courses are also offered to students who require additional English language skills training before entering academic study.

Progression Requirements

Students in the Undergraduate GSSP must achieve an overall GPA of 2.0 or higher with no grade below C- and must complete a minimum of 31 credits in order to automatically progress to the second year of their undergraduate degree program. Students in the Graduate GSSP must achieve an overall GPA of 3.0 or higher, complete a minimum of 12 credits and complete all other necessary requirements in order to progress to the next semester of their graduate degree program. Graduate GSSP students interested in Architecture must submit a full portfolio and reapply for entry into the master's degree program. Graduate GSSP students interested in the J.D. program must complete the LSAT for progression.

INDEPENDENT STUDY IN IDAHO

Sherrie Metlen, ISI Program Manager (306 Shoup Hall; 208-885-9258; www.uidaho.edu/isi; indepst@uidaho.edu)

Independent Study in Idaho (ISI) was created in 1973 by the Idaho State Board of Education as a cooperative of four accredited Idaho institutions led by the University of Idaho (U of I). Other cooperating members include Lewis-Clark State College (LCSC), Idaho State University (ISU) and Boise State University (BSU). The ISI office is located in Moscow, Idaho, on the U of I campus. Each member institution of the ISI cooperative is accredited by the Northwest Commission on Colleges and Universities (NWCCU), the region's accrediting agency. Although ISI does not offer degrees, credits earned upon course completion transfer to most colleges and universities.

ISI courses are sponsored by the cooperating institutions and are delivered online. A complete list of ISI courses, course syllabi and ISI policies and procedures are available on the ISI website (http://www.uidaho.edu/academic-affairs/independent-study). Students take ISI courses to begin college programs early, graduate on time, resolve on-campus scheduling conflicts, satisfy prerequisites or to pursue professional development and personal enrichment. Courses are not on a semester or quarter calendar so students can begin anytime, work from anywhere and take up to one calendar year to complete a course. Students can work at their own pace within limits set by the course instructor on the number of assignments that can be submitted per week. Plan on a minimum of three months to complete a course. Independent Study in Idaho courses are designed for students who work well independently with limited interaction with instructors.

Mission

Provide greater access to educational opportunities that engage a cross-section of ethnic, socioeconomic, traditional and non-traditional learners by offering flexible enrollment in quality courses with online delivery.

Idaho Teacher Librarian Endorsement (K-12)

The U of I-sponsored library science courses are only available through ISI. Coursework leading toward competency as defined by Idaho Standards for Teacher Librarians for the Idaho Teacher Librarian (K-12) endorsement includes collection development/materials selection, literature for children or young adults; organization of information (cataloging and classification); school library administration/management; library information technologies; information literacy; and reference and information services, and a qualifying score on the Idaho Praxis II test number 5311. Coursework for endorsement through ISI requires 21-semester credits, in addition to a three-credit practicum.

When the coursework, practicum, and the Praxis II Test 5311 are completed, and if students are completing an Idaho endorsement, they must contact the Certification Officer at Undergraduate Programs and Certification, College of Education, University of Idaho, 875 Perimeter Drive MS 3084, Moscow, ID 83844-3084 with their official transcripts to request institutional recommendation signature approval for completion of requirements. Because library science is not a teaching field, the teacher librarian must also qualify for a standard Idaho elementary or secondary teacher's certificate. These courses may be approved for endorsement in other states. Teachers outside the state of Idaho should check with their state's Department of Education to determine requirements and to obtain written confirmation that ISI credits are acceptable for their state's endorsement.

University of Idaho Library Science Teaching Minor

ISI's library science courses also meet the requirements for a 24 semester-hour credit teaching minor in library science from the U of I. For more information on obtaining a minor, contact the U of I College of Education (https://www.uidaho.edu/ed).

Education Professionals (K-12)

ISI courses may be used toward renewing teaching credentials and for certification. Contact your state Department of Education to determine if ISI courses are applicable.

Course Delivery and Services

Online Course Delivery

ISI students receive a Registration Confirmation Email which includes the student's Vandal number and information on how to activate Vandal Accounts to access ISI courses online. ISI courses are delivered online through the BbLearn (Blackboard Learn) learning management system.

VandalMail

A VandalMail email account will be assigned upon registration. All ISI students are required to activate and use their VandalMail email account for ISI course-related correspondence or set up email forwarding from VandalMail to another email.

Exams and Proctors

Most ISI courses require completion of a specific number of proctored exams which are delivered in hard copy format. Students are responsible for finding an acceptable proctor. View complete information concerning proctors and submit a Proctor Information Form (http://www.uidaho.edu/academic-affairs/independent-study/forms).

Disability Support Services

To request disability-related services, visit the course sponsoring institution's website. Refer to Cooperating Institutions (http://www.uidaho.edu/academics/dee/independent-study/cooperating-institutions).

Library Services

University of Idaho library resources are available to ISI students, including electronic journal databases and eBook collections. ISI students who are Idaho residents and non-residents who live within a 50-mile radius of the U of I may visit the library to obtain a guest card. All ISI students may contact their local library for information about borrowing materials through interlibrary loan. For more information see Library Resources (http://www.uidaho.edu/academic-affairs/independent-study/students/library-resources).

Registration and Fees

Registration

Students can register for ISI courses anytime without applying for admission to any of the cooperating schools. Admission to these institutions is not granted upon registering for an ISI course. ISI does not offer degrees; however, credits earned transfer to most colleges and universities. University of Idaho students working toward a degree are

required to obtain written approval from their adviser to register for an ISI course and to ensure that ISI course credits are applicable toward their degree. The University of Idaho DOES NOT calculate ISI course credits or transfer credits into the institutional GPA. It is recommended that students at other institutions obtain signature confirmation that ISI credits will be accepted from their academic department and contact their registrar to find out if ISI course grades will be calculated into the GPAs.

Fees

Idaho residency is not required. Non-residents pay the same fees as residents. Fees include registration and online course access, but do not include textbooks and other course materials. Refer to the ISI website (http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/course-fees) for current fee information.

Purchasing Course Materials

A list of required course materials is provided on the VandalStore website (http://www.vandalstore.com) and in the syllabus for each course on the ISI website (http://www.uidaho.edu/academic-affairs/independent-study/courses/find-a-course).

Financial Aid

ISI does not offer financial aid. Federal and state agencies, businesses, student financial aid services and veterans' organizations may offer financial assistance to fund ISI course fees. ISI accepts most tuition assistance payments, such as Advanced Opportunities through Idaho public high schools. Students are advised to check with their financial aid office to determine if anything is available for ISI courses. Courses taken through ISI do not count toward a student's credit hour load and cannot be used to establish full-time or part-time student status to determine eligibility for financial aid or loan deferment.

Military Benefits

The Veterans Assistance Office at the U of I can help students apply for education benefits. Contact the U of I Veterans Assistance Office (http://www.uidaho.edu/current-students/veterans-assistance) before enrolling.

Drops and Refunds

To drop an ISI course, submit the Drop Course Form (http://www.uidaho.edu/academic-affairs/independent-study/forms). A dropped course without a final grade will not appear on your academic record or transcript.

Refund Schedule

Courses dropped within 45 days of registration may qualify for a refund. See ISI Refund Schedule (http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/refund-schedule) for details.

Exchanging Courses

A course may be exchanged for another within 45 days of registration. For details see Course Exchange (http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/exchanging-a-course).

Course Extensions

A one-time, four-month course extension may be purchased for most courses. See Course Extensions (http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/course-extensions) for details.

Grades and Transcripts

Official transcripts can be purchased from the credit-granting institution (http://www.uidaho.edu/academic-affairs/independent-study/cooperating-institutions). To determine the credit-granting institution, refer to your course or note the abbreviation listed in the course syllabus on the ISI website. ISI does not issue transcripts.

INTERUNIVERSITY PROGRAM IN PUBLIC ADMINISTRATION

Brian Ellison, Chair, Department of Political Science (205 Admin Bldg; 208-885-6328)

The University of Idaho, with Idaho State University and Boise State University, offers a cooperative graduate program leading to the M.P.A. degree to provide present and prospective public administrators with a professional education and to prepare them to understand and adjust to a changing and challenging environment. Courses in core areas and in optional areas of emphasis, such as general public administration, natural resources administration, public works administration, and public finance, management, and budgeting, may be taken at any of the participating institutions without restriction. For further information, consult the Department of Political Science and Public Affairs Research.

MEDICAL EDUCATION (WWAMI PROGRAM)

Dr. Jeff Seegmiller, Director, WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) Medical Education Program (SHB 311, 83844-4207; phone 208-885-0355; e-mail: jeffreys@uidaho.edu).

WWAMI is a cooperative medical education program between the University of Washington School of Medicine (UWSOM) and the five-state WWAMI region (Washington, Wyoming, Alaska, Montana, Idaho). WWAMI has the mission and goal of increasing the training and education of medical students in their home states or neighboring northwest states, with the intent of exposing them to the unique needs and opportunities for medical careers in the region. Students complete their foundations phase of medical training in Moscow Idaho and their Clerkships in Idaho and at University of Washington's Seattle campus and partner health care facilities.

With small class sizes and individual clinical placements, Idaho WWAMI students have the opportunity to interact closely with the faculty and physicians. The WWAMI program allows access to medical education for Idaho residents by contract between Idaho and the UWSOM. Currently, 40 first-year students are admitted annually with a total class size of 160 for the four years of medical studies. The WWAMI program was developed in Idaho to train Idaho residents in medical studies, to address the need for more primary care physicians practicing in rural areas, to extend the resources and facilities of an excellent medical school into Idaho, to improve the quality of patient care, and to minimize the cost of medical education by the use of existing facilities.

Eligibility for consideration as a WWAMI medical student requires certification as an Idaho resident. UI's Undergraduate Admissions Office is responsible for residency certification.

Students interested in WWAMI apply directly to UWSOM. Idaho residents take their foundations phase years of medical studies at UI. All participating WWAMI faculty at UI hold affiliate faculty appointments at the University of Washington and in many cases develop and lead the curriculum for all five states.

Many of the physicians in the Moscow-Pullman-Lewiston area are involved in the preceptorship program in which the students work a half a day each week with local physicians and observe/participate in their practice, either in the office or at the hospital.

Participants in the WWAMI program are matriculated students of the University of Washington Medical School. Upon completion of their studies, they receive the M.D. degree. Following graduation, a postgraduate (internship/residency) training period of three to five years is required for medical practice. Medical students may also be approved for graduate studies at the University of Idaho or UWSOM leading to the M.S. or Ph.D. degree. The UWSOM M.D.-Ph.D. program usually requires a minimum of six years of study.

Medical Education Undergraduate and Graduate Course Work

A limited number of undergraduate and graduate course opportunities are available through the MEDS program. These courses are currently arranged with individual faculty.

Veterinary Medical Education (WIMU)

The University of Idaho cooperates with Washington State University in a program of veterinary medical education, research, and service. When accepted in the WI program, students from Idaho take the first three years and most of their fourth year of professional training in veterinary medicine at Washington State University. In the fourth year of the program, students also receive part of their training at the UI Caine Veterinary Teaching Center at Caldwell, Idaho, where they can specialize in food animal production medicine. Cooperative graduate programs leading to M.S. and Ph.D. degrees are also available. Idaho students seeking to enter the professional program must complete a Washington State University Uniform Undergraduate Application Form as well as a WI Program application. Both may be obtained from and returned to the Office of Student Services, College of Veterinary Medicine, Washington State University, Pullman, Washington 99164-7012. In addition, Idaho applicants must secure certification of Idaho residency status by completing and submitting the appropriate residency certification forms available through the University of Idaho Undergraduate Admissions Office.

ROTC

- Aerospace Studies (p. 368)
- Department of Military Science (p. 369)
- Department of Naval Science (p. 369)

Aerospace Studies

Colonel Glen Downing, Dept. Head (Washington State University, Kruegel Hall, phone 509-335-5598; www.afrotc.wsu.edu (http://www.afrotc.wsu.edu)**).**

The Air Force Reserve Officer Training Corps (AFROTC) offers eligible students education and training that leads to a commission as a second lieutenant in the U.S. Air Force. Air Force ROTC students may major in any degree program offered at UI; they supplement their major curricula with the specialized aerospace studies courses to prepare for active commissioned service.

Four-Year Program (General Military Course and Professional Officer Course)

A formal application is not required for students entering the four-year program. They may register for the program at the same time and in the same manner as they enroll in their other college courses. During their freshman and sophomore years, students enroll in the General Military Course (GMC), and there is NO MILITARY OBLIGATION. They then may compete for entry into the Professional Officer Course (POC), which is normally taken during the last two years of college. Selection into the POC is highly competitive and is based on qualification on an Air Force medical examination, a physical fitness test, scores achieved on the Air Force Officer Qualifying Test (AFOQT), successful completion of a paid four-week field training course at an Air Force base, and the recommendation of the professor of aerospace studies.

Air Force ROTC also offers financial assistance to selected students in the form of scholarships and subsistence allowances. The students compete for the scholarships through a national screening process. The Air Force offers 1- to 4-year scholarships that cover tuition, fees, and a book allowance, and also provide a stipend allowance ($300-$500 per month, depending on their level in the program) for each school year a student is on scholarship. Students interested in applying for scholarships should get in touch with this department. Nonscholarship students receive a stipend allowance ($450-$500 per month) while in the POC.

Air Force places a strong emphasis on physical fitness, and all ROTC cadets are required to participate at least three times a week in an organized, early morning fitness program with other cadets as part of the Leadership Laboratory requirements.

Field Training

Air Force ROTC field training is offered during the summer months at Maxwell Air Force Base, Alabama. Students in the four-year program participate in four weeks of field training, usually between their sophomore and junior years. Field Training is a mandatory program for all individuals qualified to pursue an Air Force commission through AFROTC. The program is designed to evaluate military leadership and discipline, determine potential for entry into the POC, and stratify among peers.

Leadership Laboratory

Leadership Laboratory is taken an average of two hours a week throughout the student's enrollment in Air Force ROTC. Instruction is conducted within the framework of an organized cadet wing with a progression of experiences designed to develop each student's leadership potential. Leadership Laboratory involves a study of Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force, and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised laboratory, which typically includes field trips to Air Force installations throughout the U.S. In addition, students are required to participate at least three times a week in an organized, early morning fitness program with other cadets.

Aerospace Studies Programs (p. 368)

Minors

- Aerospace Studies (p. 368)

Aerospace Studies Minor

Code	Title	Hours
Select courses from the following: [1]		20
AERO 101	Foundations of the U.S. Air Force	
AERO 102	Foundations of the U.S. Air Force	
AERO 201	Evolution of U.S. Air Force Air and Space Power	
AERO 202	Evolution of U.S. Air Force Air and Space Power	
AERO 311	Air Force Leadership and Management	
AERO 312	Air Force Leadership and Management	
AERO 313	Leadership Laboratory III	
AERO 411	National Security Affairs/Preparation for Active Duty	
AERO 412	National Security Affairs/Preparation for Active Duty	
AERO 413	Leadership Laboratory IV	
Total Hours		20

[1] At least 12 credits must be in courses numbered 300 and above.

Courses to total 20 credits for this minor

Aerospace Studies Programs

The following programs are designed to provide students with a good military and leadership foundation so students completing them can serve as effective Air Force officers. They are not designed to be academic majors and thus no bachelor's degree is offered.

For a student to receive an Air Force commission, he or she must have completed either the Four-Year Program or the Two-Year Program. Students may enter the program at points other than the two and four year points, however this requires a specialized academic program and department head approval. Contact the department head for more information. Prior-service students should consult the department to find out what course of study will be required for them.

Four-Year Program

Code	Title	Hours
AERO 101	Foundations of the U.S. Air Force	1
AERO 102	Foundations of the U.S. Air Force	1
AERO 103	Leadership Laboratory I	2
AERO 201	Evolution of U.S. Air Force Air and Space Power	1
AERO 202	Evolution of U.S. Air Force Air and Space Power	1
AERO 205	Leadership Laboratory II	2
AERO 311	Air Force Leadership and Management	3
AERO 312	Air Force Leadership and Management	3
AERO 313	Leadership Laboratory III	2
AERO 411	National Security Affairs/Preparation for Active Duty	3
AERO 412	National Security Affairs/Preparation for Active Duty	3
AERO 413	Leadership Laboratory IV	2
Total Hours		24

Department of Military Science

LTC Brad Martin, Dept. Head (West End, Mem. Gym. 83844-2424; phone 208-885-6528; armyrotc@uidaho.edu).

Military Science (Army ROTC) lecture classes are open to all students, including those not interested in pursuing a commission as an Army officer. Students who are interested in exploring a potential commission are strongly encouraged to participate in labs and the organized physical training sessions.

The primary objective of the program is to develop leadership and management skills in students. Supplementary objectives include enhancement of the student's abilities in speaking and writing, situational assessment, goal setting, and problem solving. The Department cultivates within its students a strong sense of personal integrity, self-discipline, and responsibility.

For those interested in or actually pursuing an Army commission, all levels of course work combine classroom instruction with practical exercises. The two-year basic course (100 and 200 level classes) consists of a one-credit lecture course each freshman semester and a two-credit lecture course each sophomore semester. For most students, these classes are taken simultaneously with no-credit lab courses. The curriculum covers confidence building exercises, map reading, leadership, management principles, first aid, and other life skills with broad applications beyond the military. Students in labs participate in several activities, including drill and ceremonies, rappelling and rifle marksmanship.

Other than scholarship students, no military commitment is required of students in the first two years of the program. These students survey Army opportunities and decide whether to continue in the program as advanced course students who will commission as Army officers. Students who have made a contractual commitment to seek a commission receive monthly stipends ranging from $300 to $500 depending on status. Scholarships from two to four years are available to some students.

The advanced course consists of three-credit lecture and no-credit lab courses normally taken each semester during the last two years of university study. The program also includes a four-week advanced camp at Fort Knox, Kentucky (normally after the junior year). Study centers on leadership styles and techniques with special emphasis placed on small unit leadership.

Army ROTC is the major source of commissioned officers for the U.S. Army. After successfully completing the program and baccalaureate degree requirements in almost any field, the student receives a commission as a second lieutenant. Active duty is not a requirement but is something for which students compete. Graduates also choose from among 26 different Army branches or specialties. Those not choosing active duty serve with the Army Reserves or Army National Guard on a part-time basis.

Prior to commissioning, all cadets must demonstrate proficiency in communications and military history. This may be achieved through taking UI course offerings in those subject areas. See your Army ROTC class advisor for a list of approved courses.

Departmental members will answer questions about specific programs and courses. Contact the department by going to the west end of Memorial Gymnasium or by calling 208-885-6528 or 1-88-88-UIDAHO, or by e-mail at armyrotc@uidaho.edu. Further information is available on the web at www.armyrotc.uidaho.edu.

Minors

- Military Science Minor (p. 369)

Military Science Minor

Code	Title	Hours
MS 301	Adaptive Team Leadership	3
MS 302	Applied Team Leadership	3
MS 401	Mission Command and the Army Profession	3
MS 402	Mission Command and the Company Grade Officer	3
Select 3 credits of Military Science courses		3
Select one Military History Course [1]		3
Total Hours		18

Courses to total 18 credits for this minor

1. Selected in consultation with the Professor of Military Science, this course should develop the student's awareness of the relationship of the military establishment to society, particularly in the United States, and develop their interest in the evolution of war and the progression of military professionalism.

Department of Naval Science

CAPT Shaun McAndrew, Commanding Officer, Naval Science (Hayes Hall, University of Idaho; phone 208-885-6333; www.uidaho.edu/navy-rotc)

The Navy-Marine Corps Officer Education Program is administered and taught by the Naval Science Department Staff on the University of Idaho, Moscow campus. The Program's objective is to provide instruction and training to students in preparation for being commissioned as officers in the United States Navy or Marine Corps through the Naval Reserve Officers Training Corps (NROTC). Students are designated as midshipmen and receive extensive academic, physical, and leadership training while pursuing a degree. The Program is open to men and women and offers scholarships leading to active duty commissions. Normally, students

enter the program at the beginning of their freshman year; however, selected students may enter up to the beginning of their sophomore year and in very limited cases the beginning of their junior year. Students take up to 25 hours of professional development courses taught by the NROTC Unit and must participate in NS 103 Introduction to Naval Science Laboratory each semester. All Naval Science courses and the lab are conducted at the University of Idaho. Students attending Washington State University are able to participate in the Program and can register for these courses via the UI/WSU Cooperative Courses program. In addition to the required Naval Science courses, all NROTC students must complete additional academic requirements as stipulated in their contract. For Navy Option students, Service Assignment is completed during their senior year and students may be assigned to duty on nuclear submarines, surface ships, naval aviation or special warfare. Service assignment for Marine Option students occurs following completion of The Basic School after graduation.

Scholarship Program

NROTC scholarship students' benefits include tuition, fees, a book allowance, and a monthly stipend. Room and board are not covered by the scholarship.

Application for this Program is normally made during the spring of the junior year or early fall of the student's senior year of high school. Initial selections for these National Four-Year Scholarships are completed by a Naval Service Training Command-sponsored board and are based on college entrance examination scores (SAT or ACT) and high school academic performance.

A student on scholarship will complete three summer training cruises of four to six weeks duration. During the first cruise, students are introduced to the submarine, amphibious warfare (Marine Week), surface warfare, and aviation communities. For Navy option students, the second and third cruises can be aboard nuclear submarines, surface ships, or with aviation units of the Pacific or Atlantic fleets and may include overseas travel. Marine Option students attend Officer Candidate School in Quantico, VA for their final summer training evolution. During summer training events, the students receive one-half of the pay of an Ensign/Second Lieutenant, plus room and board.

Graduates of this program are commissioned as officers in the Navy or Marine Corps.

College Program

College Program students receive uniforms and Naval Science textbooks at no cost but receive no other financial benefits.

Application for this program is normally made during the spring of the student's senior year of high school and in limited cases the end of their freshman year of college. Applications can be obtained from the Unit's website and should be sent directly to the Naval Science Department Head of the University of Idaho. Selections are based on college entrance examination scores (SAT or ACT) and high school/university academic performance. Students can apply to either the Navy or Marine option programs.

College Program students may be nominated by the Professor of Naval Science for a three-year scholarship during their freshman year or a two-year scholarship or Advanced Standing during their sophomore year if their grades and military aptitude marks are sufficient to warrant such nomination. Students who are not selected for a scholarship or Advanced Standing by the end of their sophomore year are not allowed to continue in the Program. Students who are selected for a scholarship or Advanced Standing will conduct, at a minimum, one summer training evolution following their junior year. It is an afloat cruise (Navy Option) or attendance at Officer Candidate School (Marine Option) of the same type and with the same pay as described for the Scholarship Program. Graduates of this program are commissioned as officers in the Navy or Marine Corps.

UI Room and Board Scholarship

The University of Idaho established a $5,000 room and board scholarship for all new incoming NROTC students selected for a 4-year national NROTC scholarship and those accepted as College Programmers. The scholarship can be renewed for up to 4 years per student, as long as the student is an active Midshipman, a full-time degree seeking undergraduate, and living in a University of Idaho residence hall. The award can be combined with other scholarships but cannot exceed the cost of attendance established by the Financial Aid Office and may be adjusted each year if scholarships or grants exceed the established cost of attendance. Funds cannot be used for tuition or book expenses. Work closely with your Financial Aid adviser to fully understand what your scholarship covers and any adjustments that may be made to your scholarships.

Field Trips

Field trips to Navy and Marine Corps facilities are arranged periodically in order to allow the Navy-Marine Corps Officer Education Program members the opportunity to learn more about the naval service.

Minor

- Naval Science Minor (p. 370)

Naval Science Minor

Code	Title	Hours
NS 303	Ship Systems I	3
NS 304	Ship Systems II	3
NS 104	Seapower and Maritime Affairs	3
Students must complete a minimum of four courses from the lists below to equal 12 credits:		
Select two from the following:		6
NS 203	Workshop	
NS 205	Navigation	
NS 311	Evolution of Warfare	
NS 403	Workshop	
NS 402	Naval Leadership and Ethics	
NS 412	Fundamentals of Maneuver Warfare	
Select one from the following:		3
HIST 180	Introduction to East Asian History	
HIST 438	Modern Mexico and the Americas	
HIST 440	Social Revolution in Latin America	
HIST 457	History of the Middle East	
HIST 484	Modern China, 1840s to Present	
HIST 485	Chinese Social and Cultural History	
IS 325	The Contemporary Muslim World	
IS 326	Africa Today	
IS 370	African Community, Culture, and Music	

POLS 420	Introduction to Asian Politics	
Select one from the following:		3
AERO 411	National Security Affairs/Preparation for Active Duty	
AERO 412	National Security Affairs/Preparation for Active Duty	
HIST 430	U.S. Diplomatic History	
MS 227	American Military History	
POLS 338	American Foreign Policy	
POLS 449	World Politics and War	
Total Hours		21

Courses to total 21 credits for this minor

SUMMER SESSION

Summer Session is an integral part of the year-round instructional program at the University of Idaho. A fourteen-week summer session begins about the third week of May. The flexible summer schedule includes a session that begins the Monday following Commencement, a second session that starts in mid-June, and a late session that starts mid-July. Summer session ends the Friday prior to the start of fall semester. The summer schedule of classes is designed to provide students with the opportunity to complete their academic programs in a timely manner. Special and innovative programs are offered to meet the needs of in-service professionals and other clientele throughout the state and nation.

Academic regulations included in this catalog are applicable during the summer session. For more information, call 208-885-4074 or visit the web, www.uidaho.edu/summer.

UNIVERSITY HONORS PROGRAM

Sandra Reineke, Director (315 Idaho Commons; phone 208-885-0154; www.uidaho.edu/honors); Kendra Buell, Administrative Coordinator.

Established in 1983, the University Honors Program (UHP) fosters academic excellence in undergraduate education by offering a stimulating course of study and the advantages of an enriched learning community for students from all colleges and majors.

The program's diverse curriculum serves a variety of student needs and interests. Through honors core courses in general education and innovative seminars, honors faculty work to enhance each student's knowledge, initiative, and creativity. Most honors classes are small, so that honors students benefit from close intellectual contact and discussion with their instructors and fellow students. As part of a dynamic, broad-based education, members are encouraged to participate in domestic or international exchange programs; appropriate credit is determined within the honors curriculum for academic work completed while on exchange so that students may apply three or four credits per semester (maximum of seven credits total over two semesters) toward the Honors Certificate requirements. Students also are encouraged to take advantage of opportunities to engage in laboratory or field-based research programs as well as internships and other forms of cooperative education. The program director, associate director, and program advisor act as supplemental academic advisors to all students who qualify for honors study.

Beyond the classroom, the program's extracurricular opportunities include concerts, plays, films, lectures, and other excursions that support cultural enrichment, friendship, and learning. The great majority of the approximately 500 students active in the program are able to participate without adding to the total number of credits needed for graduation.

Admission Process

Admission to the University Honors Program is selective. Applications can be submitted online year-round. In order to ensure timely enrollment in honors courses, applications should be submitted at least two weeks prior to the beginning of the fall and spring semesters. Initial application criteria for prospective freshmen are based on a correlation between the student's high school GPA and an ACT composite score or the SAT Reasoning scores for Critical Reading and Math. For example, students who have received a 28 ACT composite score, or a 1260 SAT combined Critical Reading and Math score, and a 3.77 high school GPA meet the initial minimum criteria. The correlation is based on a sliding scale: students with test scores higher than those noted may have GPAs below 3.77 and still meet the minimum criteria; students with higher GPAs may have test scores lower than the examples offered above. Students applying from high school also submit a two-page essay as part of the application.

Students who do not meet the initial admission criteria, including those who may not be able to provide a GPA from an accredited high school, those who are home schooled, or those who do not have SAT or ACT scores, are encouraged to write to the honors director to express their interest in seeking admission to the program. Two former teachers also must send letters of recommendation to the director; students may then be asked to proceed with writing the admission essay. Current students who achieve a minimum 3.5 GPA at the University of Idaho (UI) also may apply for admission. Transfer students with a 3.5 GPA are considered for admission on a case-by-case basis. Students in good standing in an honors program at their previous school are considered for admission based on a review of their previous honors course work. Their transcripts are evaluated and appropriate credit given toward courses in the honors curriculum.

Participation Requirements

A member in good standing of the University Honors Program must be registered at the UI, maintain a 3.3 cumulative GPA, and complete a minimum of six graded honors credits by the end of the second semester; thereafter, students must complete, on average, one honors course every second semester. Students in the program who have averaged at least one graded honors course each semester and have a cumulative institutional GPA of 3.3 (credits earned at the UI) are allowed to register with the first group of seniors.

Students may use Honors sections of UI General Core Studies (GCS) courses to count toward satisfying university core requirements in general education. Depending on which courses students select, as many as 26 honors credits satisfy university core requirements in the humanities, social sciences, and natural and applied sciences. At present, honors seminars do not carry designated GCS Humanities or Social Science credits.

Honors Core Award Requirements

Students must complete 19 total honors credits. Up to three approved academic or experiential "points" may be substituted for honors credits. Up to nine Honors Course Contract credits, including Honors Research, may be applied toward the Core Award. Students must earn a 3.0 GPA or above in honors coursework and earn a UI cumulative GPA of 3.3 or above.

Honors Scholar Award Requirements

Students must complete 27 total honors credits. Up to six approved academic or experiential "points" may be substituted for honors credits. Up to twelve Honors Course Contract credits, including Honors Research credits, may be applied toward the Scholar Award. At least six of the honors course credits must be earned at the 300- or 400-level. Students must earn a GPA of 3.0 or above in honors coursework and earn a UI cumulative GPA of 3.3 or above.

Honors Scholar with Distinction Award Requirements

Students must complete 27 total honors credits including an honors thesis. Up to six approved additional academic or experiential "points" may be substituted for honors credits. Up to twelve Honors Course Contract credits, including Honors Research credits, may be applied toward the Scholar with Distinction Award. At least six of the honors course credits must be earned at the 300- or 400-level. Students must earn a GPA of 3.0 or above in honors coursework and a UI cumulative GPA of 3.3 or above.

Scholarship Availability

Each year scholarships are offered to a select number of students in the program- these awards are applied to resident fees. No additional application form is required. Likewise, a select number of UHP out-of-state tuition waivers are offered to non-Idaho residents. The awards are renewable, contingent on satisfactory progress toward and completion

of specified course and credit requirements while maintaining an overall institutional GPA of 3.3. In addition, members of the University Honors Program have been successful in taking advantage of mentorship and advice regarding prestigious national scholarship opportunities.

Learning Outcomes

University Honors Program expectations for learning outcomes are aligned with the following University-Level Learning Outcomes affirmed by Faculty Council October 3, 2006. University level learning outcomes broadly describe expected and desired consequences of learning through integrated curricular and co-curricular experiences. The outcomes become an expression of the desired attributes of an educated person and guide coherent, integrated and intentional educational experiences. They provide the university with a basis for ongoing assessment to continuously improve teaching and learning.

1. Learn and integrate - Through independent learning and collaborative study, attain, use and develop knowledge in the arts, humanities, sciences, and social sciences, with disciplinary specialization and the ability to integrate information across disciplines.
2. Think and create - Use multiple thinking strategies to examine real-world issues, explore creative avenues of expression, solve problems, and make consequential decisions.
3. Communicate - Acquire, articulate, create and convey intended meaning using verbal and non-verbal methods of communication that demonstrate respect and understanding in a complex society.
4. Clarify purpose and perspective - Explore one's life purpose and meaning through transformational experiences that foster an understanding of self, relationships, and diverse global perspectives.
5. Practice citizenship - Apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities.

UNIVERSITY OF IDAHO CENTERS

University of Idaho, Boise

Michael Satz, Associate Vice President and Executive Officer
University of Idaho Boise and Southwest Region. 322 East Front Street, Suite 190, Boise, Idaho 83702; 208-334-2999; www.uidaho.edu/boise, boise@uidaho.edu

Strategic Focus

As the state's only land-grant institution, the University of Idaho is responsible for engaging citizens, businesses and institutions throughout the state.

The University of Idaho Boise (http://www.uidaho.edu/boise) provides access to all University of Idaho resources to southwest Idaho. UI Boise is focused on community impact, regional economic development and supporting university growth, as well as having an engaged university campus with a climate of inclusion for employees throughout its regions of responsibility.

Strategically located in Boise, the economic and governmental center of Idaho and home of more than 55 percent of the state's population and business entities, UI Boise supports teaching, learning, research and outreach. We distinguish ourselves through:

- Quality programs that accommodate working professionals and full-time students with a focus on professional and workforce development.
- Outreach to southwest Idaho's communities to foster their sustainability, growth and educational access.
- Proactive research for domestic and global solution.
- Collaborative and interdisciplinary work with the public and private sectors, including other institutions of higher education.
- Enduring relationships with alumni and friends to carry forward the proud history and traditions of the University of Idaho.

Location

The University of Idaho established a presence in Boise with the Ada County Extension program in 1910. Today, the primary home of the University of Idaho Boise is at the intersection of Front Street and Broadway Avenue in the Idaho Water Center building, with other locations throughout the downtown, such as the College of Law at the Idaho Law and Learning Center on Jefferson St.; the Integrated Design Lab on Front St.; and the Ada County Extension offices located on Glenwood Street.

UI Boise also has leadership and administrative responsibility for University of Idaho activity in south central Idaho, including the Magic Valley and Wood River Valley.

Academic Programs in the Boise Area

Consistent with the role and mission assigned by the State Board of Regents and the University of Idaho's land-grant designation, the University offers select Master's, Specialist's and Doctorate degrees programs in Boise. Additional professional programs, certificates and courses are offered in response to needs of the community. Programs and courses are offered in many formats including traditional classroom, hybrid, and online. Students participate in degree and certificate programs in the following disciplines:

Agricultural & Life Sciences

- Agricultural Education: M.S.
- Food and Nutrition: Dietetics B.S. (Students will spend the junior year in the Moscow campus, senior year is based at UI Boise or UI Coeur d'Alene)
- Agricultural Science, Communication and Leadership: B.S. (2+2 at College of Western Idaho)

Art & Architecture [1]

- Architecture: M.Arch.
- Landscape Architecture: M.L.A
- Bioregional Planning and Community Design: M.S
- Bioregional Planning and Community Design: M.S / J.D
- Bioregional Planning and Community Design: Certificate
- Integrated Architecture and Design: M.S

[1] The College of Art and Architecture also offers coursework that satisfies the first 2 years of UI's Architecture, Landscape Architecture and Interior Design degree programs in Boise.

Education

- Adult & Organizational Learning and Leadership: M.S.
- Career and Technical Education: Certification
- Business & Marketing Education - Secondary
- Occupational Education - Secondary
- Curriculum & Instruction: M.Ed. & Ed.S. (Emphasis available in: Career & Technical Education)
- Education: Ed.D., Ph.D
- Educational Leadership: M.Ed., Ed.S.Ed.Ldrshp.
- Human Resource Development: Certificate
- Technical Workforce Training: Certificate
- Rehabilitation Counseling and Human Services: M.Ed.
- Special Education: M.Ed. and K-12 Certification Recommendation, Elementary or Secondary (Prereq: Certification in General Education)

Engineering

- Biological Engineering: M.S., M.Engr., Ph.D.
- Civil Engineering: M.S., M.Engr., Ph.D.
- Engineering Management: M.Engr.
- Mechanical Engineering: M.Engr., M.S., Ph.D.
- Technology Management: M.S.

Interdisciplinary Degrees

- Environmental Science: M.S.
- Natural Resources and Environmental Science: P.S.M.
- Water Resources: M.S., Ph.D.

Law

College of Law students have the option of completing their 2nd and 3rd year at the College of Law Boise.

- Juris Doctor
- Concurrent degree J.D./M.S. in Accountancy, Taxation (offered in conjunction with the Boise State University College of Business and Economics)

- Concurrent degree J.D./M.B.A. (Master of Business Administration) (offered in conjunction with the Boise State University College of Business and Economics)

The 3rd year program in Boise also offers clinical experiences with the Small Business Legal Clinic, the Low Income Taxpayer Clinic, and the Economic Development Clinic. Students in clinics, under the direction of their licensed supervisor, represent clients in addressing their legal needs.

Letters, Arts and Social Sciences

CLASS offers a psychology undergraduate program in southwest Idaho in partnership with College of Western Idaho and College of Southern Idaho (see 2+2 Programs sections below). In addition, CLASS offers the following online programs:

- Criminology B.A, B.S
- General Studies, B.A, B.S
- History, B.A, B.S
- Psychology, B.S
- Psychology, M.S in Human Factors
- Public Administration, M.S.
- Organizational Science, B.A, B.S

Medicine

In partnership with the University of Washington School of Medicine, the Idaho WWAMI Clinical Education offices in Boise offer all required and elective clinical clerkships for 3rd and 4th year medical students throughout the State of Idaho.

Natural Resources

- Natural Resources: M.N.R.
- Fire Ecology and Management: M.N.R
- Fire Ecology, Management & Technology: graduate certificate
- Restoration Ecology: graduate certificate

2+2 Programs at CSI and CWI

Academic Programs in Twin Falls

The University of Idaho and College of Southern Idaho partnership allows students to complete UI courses at the UI Twin Falls Research & Extension Center on the CSI campus. Other degrees and programs are available through the University of Idaho's online programs.

- Agriculture Science, Communication & Leadership: B.S.Ag.L.S. (upper division offered in conjunction with CSI)
- Career and Technical Education: Certification
- Criminology B.A., B.S. (upper division offered in conjunction with CSI)
- Education (offered in conjunction with CSI)
- Emphasis in Engineering & Technology Education - Secondary
- Psychology (upper division offered in conjunction with CSI)

Academic Programs at the College of Western Idaho

With the 2+2 program you can earn a University of Idaho degree at College of Western Idaho without leaving the Treasure Valley. This program is designed for working professionals or individuals who are place-bound.

- B.S. in Agricultural Science, Communication and Leadership (upper division offered in conjunction with CWI)
- Criminology B.A., B.S. (upper division offered in conjunction with CWI)
- B.S. in Psychology (upper division offered in conjunction with CWI)

Online and Distance Education Degrees

There are several undergraduate and graduate degree programs that can be completed via online or distance education:

- Criminology B.A, B.S
- General Studies, B.A, B.S
- History, B.A, B.S
- Psychology, B.S
- Organizational Science, B.A, B.S
- Graduate degrees: Learn more about graduate degrees at the College of Graduate Studies (p. 232).

Research and Community Services in the Southern Region

The University of Idaho Boise increases access to continuing education for the local population and extends outreach programs statewide.

Additionally, as the state's land-grant institution, the University of Idaho has a statewide footprint. Extension educators are based in 42 of Idaho's 44 counties. Research and Extension centers are located throughout the state in service of Idaho's agricultural economy.

The University of Idaho Boise supports southwest Idaho researchers, educators and Extension specialists in the disciplines of aquaculture; family economics; science education; early childhood education and family literacy; nutrition education; food safety and processing; and educational communications.

Research, Outreach, and Extension at UI Boise includes

- 4-H Outreach to Military Kids
- 4-H Extension Robotics
- Center for Ecohydraulics Research
- Center on Disabilities and Human Development
- Confucius Institute
- Family & Consumer Sciences
- Food Technology Center
- Idaho Geological Survey
- Idaho Water Resources Research Institute (IWRRI)
- Integrated Design Lab
- James A. & Louise McClure Center for Public Policy Research
- Pesticide Safety Management
- Small Business Legal Clinic
- TechHelp
- TRiO
- Urban Design Center

Research, Outreach, and Extension in Southwest Idaho includes

- Aquaculture Research Institute - Hagerman
- Kimberly Research and Extension Center
- McCall MOSS
- Parma - Southwest Idaho Research and Extension Center
- Twin Falls Research and Extension Center

University of Idaho, Coeur d'Alene

Charles Buck, Associate Vice-President and CEO of University of Idaho Northern Idaho (1031 N. Academic Way, Suite 242, Coeur d'Alene, ID

83814-2277. Phone: 208-667-2588, Fax 208-664-1272; www.uidaho.edu/cda, cdactr@uidaho.edu).

The University of Idaho Coeur d'Alene was established to bring U-Idaho programs to the people of northern Idaho, eastern Washington and western Montana. Cooperative relationships with other Idaho institutions, as well as those in eastern Washington, allow our students to finish various degrees without leaving the area. Undergraduate, graduate and certificate programs are offered in Coeur d'Alene. Courses are taught on-site by resident and adjunct faculty or offered via videoconferencing and on-line. Many Coeur d'Alene programs are designed for working professionals seeking a college education or advanced degree.

Undergraduate degrees offered at U-Idaho Coeur d'Alene or through on-line course work include the following:

- Career and Technology Education
- Child, Family, and Consumer Studies: Child and Youth Development
- Computer Science
- Early Childhood Development and Education
- Elementary Education with K-8 credential. Certification in Elementary Education is available for those students who hold a bachelor's degree and seek a teaching certificate.
- English: Literature Emphasis
- English: Professional Writing Emphasis
- Environmental Science: Physical Science Option 2
- Food & Nutrition: Nutrition Option
- General Studies
- Interdisciplinary Studies
- Organizational Sciences
- Psychology with Addictions

Several Academic minors are available through live or on-line coursework.

Graduate degrees offered at U-Idaho Coeur d'Alene or through on-line course work include the following:

- Adult and Organizational Learning and Leadership
- Curriculum and Instruction
- Educational Leadership
- Environmental Science – Water Science Emphasis
- Executive Master of Business Administration
- Master of Natural Resources
- Professional Science Master's in Natural Resources and Environmental Science
- Rehabilitation Counseling and Human Services
- Special Education
- Additional graduate coursework and degrees available through Engineering Outreach

Certificate programs offered at U-Idaho Coeur d'Alene or through on-line course work include the following:

- Environmental Contamination Assessment
- Environmental Water Science
- Fire Ecology
- Geographical Information Systems (GIS)
- Organizational Dynamics
- Restoration Ecology

Engagement with local citizens, businesses and agencies in northern Idaho is a primary goal of the university. The role of the Center is to make university resources, expertise and facilities available throughout the region. In addition to academic program offerings, the Center promotes business development with corporate research, programs in support of business start-ups, and continuing education opportunities for area professionals. A major Center initiative, Dign'IT, aims to develop cultural awareness of the importance of software engineering and computer science. This industry-driven initiative provides services and promotes training in these areas for people of all ages. The Center hosts local and regional research projects in water quality and environmental science via its Community Water Resource Center that also serves as an outreach center for local tribes, agencies and advocacy groups. Laboratory facilities in the Center support diverse research activities.

The University of Idaho Coeur d'Alene has a strong history of serving the needs of local school districts through professional development programs and non-credit program offerings to support local public school administrators, teachers and students. A current emphasis is to promote computer science training in public schools.

Scholarly and creative activity and research are components of all faculty programs in northern Idaho. University of Idaho Coeur d'Alene faculty have established research programs in key areas including nutrition, child development, literacy, science education, educational leadership and addiction studies.

The University of Idaho Coeur d'Alene houses the North Idaho Regional Special Education Office in cooperation with the Idaho State Department of Education. The Regional Special Education Consultant provides local communities with technical assistance, in-service education, and monitoring support. The Office also includes the North Idaho Regional Special Education Library, a collection of materials designed to be a resource and support for Special Education Teachers, directors, parents, and other professionals. The Center also houses the regional Assistive Technology Lending Library providing technologies for citizens in the region that are in need.

The Extension Northern District Office is located at U-Idaho Coeur d'Alene and provides support for ten northern Idaho counties. Extension non-credit programs are offered at the local level in competitive agriculture, community development, nutrition and food safety, family and youth, and natural resources.

University of Idaho, Idaho Falls

Mark Skinner, Associate Vice President and Center Executive Officer, (1776 Science Ctr. Dr., Suite 306, Idaho Falls, Idaho 83402; 208-282-2900 www.uidaho.edu/idahofalls).

The University of Idaho, in partnership with Idaho State University, operates the Center for Higher Education at University Place in Idaho Falls. University Place serves over 3,000 undergraduate and graduate students in eastern Idaho. The center is ideally located on the banks of the Snake River and adjacent to the Idaho National Laboratory (INL). Yellowstone and Teton National Parks, scenic forests, pristine wilderness areas, and world-class recreational activities are located nearby.

Academics

Consistent with the role and mission assigned by the State Board of Regents and the University of Idaho's land-grant designation, the

university offers select Undergraduate, Master's, Specialist's and Doctorate degree programs in Idaho Falls. Additional professional programs, certificates and courses are offered in response to needs of the community. Over 150 University of Idaho courses are offered at the center each semester. Courses are taught on-site by resident and adjunct faculty and are offered via interactive video, electronic media, and the Internet.

Undergraduate degrees are available in the following disciplines:

- Environmental science
- General studies
- Industrial Technology.

Graduate degrees are available in the following disciplines:

- Biological and Agricultural Engineering
- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science
- Computer Engineering
- Electrical Engineering
- Engineering Management
- Environmental Science
- Hydrology
- Industrial Safety
- Interdisciplinary Studies
- Materials Science & Engineering
- Mechanical Engineering
- Metallurgy
- Nuclear Engineering
- Technology Management

Research

The center is strategically located next to the Idaho National Laboratory (INL) and The Center for Advanced Energy Studies (CAES). This location is ideal for research collaboration opportunities. The Idaho Falls Center is focusing on delivering advanced education and research programs addressing state and national energy and security needs in partnership with the INL, industry, and university partners. The Idaho Falls Center houses the eastern Idaho branch of the Idaho Water Resources Research Institute (IWRRI).

Idaho National Laboratory

In operation since 1949, the INL is a science-based, applied engineering national laboratory dedicated to supporting the U.S. Department of Energy's missions in nuclear and energy research, science, and national defense. The laboratory works with national and international governments, universities and industry partners to discover new science and develop technologies that underpin the nation's nuclear and renewable energy, national security and environmental missions.

The Center for Advanced Energy Studies

CAES is focused on creating a unique and collaborative environment for our energy future, including cross-organizational and peer-to-peer technical collaboration. It will address science, engineering and technology development critical to U.S. and global energy needs. CAES research will focus on energy affordability, environmental safety, and technology research in nuclear, hydrogen, fossil fuels (coal, oil and gas), plus the full spectrum of renewable energy sources. CAES' research agenda will foster collaborations and interdisciplinary studies and make its research and development facilities, and those of INL, available to a network of universities.

Idaho Water Resources Research Institute

IWRRI supports and directs water research for the State of Idaho and the region. IWRRI research results routinely lead to cutting-edge discoveries in such vital topics as water quality, water supply and water management. More importantly, these discoveries regularly lead to a greater understanding of our surroundings, offering sensible solutions toward maintaining a healthy balance between the economy and the environment.

Community and Statewide Services

The College of Agriculture District IV Research and Extension Office at the Idaho Falls Center provides extension programming and agriculture related activities.

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COURSE INFORMATION

Course Numbering System and Key to Abbreviations and Symbols

Numbering System

Courses numbered 001 are continuing education unit (CEU) courses; those numbered 010-099 are remedial-level courses carrying no credit; those numbered 100-299 are lower-division courses primarily for undergraduates; 300-499 are upper-division courses primarily for advanced undergraduates, fifth-year students, and graduates; courses numbered 500-599 are intended for and are restricted to students enrolled in the College of Graduate Studies (see regulation B-7 (p. 80) for the exception to this rule); courses numbered 600-699 are intended for and are restricted to students enrolled in a doctoral program; courses numbered 800-999 are intended for and are restricted to students enrolled in the College of Law.

University of Idaho General Education Categories and Idaho GEM Categories

University of Idaho Category	Idaho GEM Category
Communication	Oral Communication
English	Written Communication
Mathematics	Mathematical Ways of Knowing
Natural and Applied Sciences	Scientific Ways of Knowing
Humanities	Humanistic and Artistic Ways of Knowing
Social Science	Social and Behavioral Ways of Knowing
American Diversity	Institutionally Designated Competency Area
International	Institutionally Designated Competency Area
Integrated Studies	Institutionally Designated Competency Area
Senior Experience	Institutionally Designated Competency Area

Letter Designations with Numbers

Certain course numbers also include letters preceding the number (i.e. R101, C100):

C - offered by correspondence study only.

H - offered only in University Honors Program.

J - courses conducted jointly, e.g., MUSA J365/J565 (Chamber Ensemble), in which students' assignments and expected levels of performance reflect the levels for which they are enrolled.

R - offered only at the University of Idaho at Idaho Falls.

Subtitled Courses

An "s" in parentheses between the number and title of a course indicates that the course may be offered under the main title and/or with an appended subtitle, e.g., "Seminar" and/or "Seminar in the History of the Pacific Northwest." The specific area normally will be listed in the Class Schedule as a separate section of the main course.

Credit Designations

Immediately following each course title, the number of credits authorized is shown in parentheses. Typical designations are:

(3 credits) - three semester credits (for courses with more than one number, e.g., 101-102-103, the three credits apply to each number).

(1-3 credits) - one to three semester credits.

(3 credits; 2 credits) - three credits fall semester; two credits spring semester.

(1-3 credits, max 3) - one to three credits during any academic session and the course may be repeated until the maximum of three credits has been earned.

(3 credits, max 12) - three credits during any academic session and the course may be repeated until the maximum of twelve credits has been earned (for a course with more than one number, e.g., 301-302, the maximum is overall and applies to the combined numbers).

(Credit arranged) - credits to be arranged from 1 to 16 credits (may be repeated for credit without restriction as to maximum).

(1-3 credits, max arranged) - one to three credits during any academic session, and the course may be repeated.

Standard Course Numbers

University-wide numbers have been established for certain categories of courses. These courses need not be listed in a subject-field section in the catalog unless they are to be offered regularly; they may be offered and listed in the Class Schedule whenever they are needed. The following course numbers and titles are authorized: 200, 400, 501, 601 Seminar; 203, 403, 503, 603 Workshop; 204, 404, 504, 604 Special Topics; 405, 505, 605 Professional Development; 298, 398, 498, 598, 698 Internship; 299, 499, 502, 602 Directed Study; 500 Master's Research and Thesis; 597 Graduate Practicum; 599 Non-thesis Master's Research; 600 Doctoral Research and Dissertation.

Other Abbreviations

alt/yrs - offered in alternate years

alt/sem - offered in alternate semesters

coreq - corequisite

cr - credit

dem - demonstration

dept - department

disc - discussion

div - division

exam - examination

GPA - grade-point average

grad - graduate

hr - hour

intro - introduction(-tory)

Jr - junior

lab(s) - laboratory(-ies)

lec - lecture(-s)

perm - permission of instructor

perm of dept - permission of department or subject-field chair

P/F - graded on the basis of pass or fail

prereq - prerequisite

reqd - required

Soph - sophomore

Sr - senior

undergrad - undergraduate

COURSES

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ACCOUNTING (ACCT)

ACCT 200 (s) Seminar
Credit arranged.

ACCT 201 Introduction to Financial Accounting
3 credits
Overview of the nature and purpose of general purpose financial statements provided to external decision makers; emphasis on use of financial statement information. May involve evening exams.

ACCT 202 Introduction to Managerial Accounting
3 credits
Intro to cost behavior and managerial use of accounting information for planning, control, and performance evaluation. May involve evening exams.
Prereq: ACCT 201.

ACCT 203 (s) Workshop
Credit arranged.

ACCT 204 (s) Special Topics
Credit arranged.

ACCT 299 (s) Directed Study
Credit arranged
Individual sections may be graded P/F.
Prereq: Permission.

ACCT 305 Accounting Information Systems
3 credits
Role of accounting information systems in effective control of organizations. Topics include: the description and analysis of the accounting cycles and internal controls including the implementation and evaluation of internal control effectiveness; the role of internal controls in the detection and prevention of fraud; the conceptual design and documentation as well as the practical use of accounting information systems. May include evening exams.
Prereq: ACCT 201 and ACCT 202 .

ACCT 315 Intermediate Financial Accounting I
3 credits
Preparation of general purpose financial statements for external users based on U.S. generally accepted accounting principles. Emphasis on transactions relating to financing and investing activities. Conceptual framework based instruction includes comparison with alternative treatments used in other countries and under U.S. tax code. May include evening exams.
Prereq: ACCT 201 and ACCT 202.

ACCT 325 Intermediate Financial Accounting II
3 credits
Continuation of ACCT 315. Covers more advanced topics in the preparation of general purpose financial statements for external users according to US GAAP. Includes accounting database research. May include evening exams.
Prereq: ACCT 315 .

ACCT 385 Cost and Management Accounting
3 credits
Design and use of cost management systems to support decision making and influence behavior; includes tracing costs to processes, activities, products, and customers; budgeting and responsibility accounting. May require evening exams.
Prereq: ACCT 201 and ACCT 202.

ACCT 400 (s) Seminar
Credit arranged.

ACCT 403 (s) Workshop
Credit arranged.

ACCT 404 (s) Special Topics
Credit arranged.

ACCT 405 (s) Professional Development
Credit arranged
Joint-listed with ACCT 505
Credit earned in these courses will not be accepted toward graduate degree programs.
Prereq: permission.

ACCT 415 Advanced Financial Accounting & Reporting
3 credits
Joint-listed with ACCT 515
Accounting and financial reporting for business combinations (including consolidated financial statements), international accounting issues, foreign currency translation, and accounting for partnerships. The course emphasizes the conceptual understanding of accounting for mergers and acquisitions as well as the technical requirements. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit.
Prereq: ACCT 325 or Graduate Standing.

ACCT 421 Accounting Data Analytics
3 credits
Joint-listed with ACCT 521
Role of accounting data analytics in the detection and assessment of fraud in an organizational setting. Topics include: definitions and detection of fraud; the application of data analytic and statistical techniques to detect different types of frauds; and the use of data analytics techniques in the audit function
Prereq: ACCT 315 .

ACCT 440 Fraud Examination
3 credits
Joint-listed with ACCT 550
Fraud prevention, detection, investigation, and resolution. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit.
Prereq: ACCT 201 .

ACCT 482 Enterprise Accounting
3 credits
Joint-listed with ACCT 582
Carries no credit toward master's degree in accounting. Both business and non-business students will learn the critical role played by financial statements as entrepreneurs try to launch a new business. The trade-offs of various funding sources and their impacts on financial statements are also explored. Content will be presented in an integrated manner, rather than concept by concept, to emphasize the interrelatedness of forecasts and assumptions regarding revenues, costs, and financing on financial statements and thus, the resulting business model. Additional projects and/or assignments required for graduate credit. May involve evening exams.

ACCT 483 Fundamentals of Federal Taxation
3 credits
Income determination, deductions, accounting methods, sales of property, deferral of tax, taxation of the individual, tax research, with primary emphasis on tax planning; the case method is used. May include evening exams.
Prereq: ACCT 201 and ACCT 202 .

ACCT 484 Federal Taxation of Entities
3 credits
Joint-listed with ACCT 584
Taxation of corporations and partnerships with emphasis on tax planning, tax research; the case method is used. Additional class meetings, projects, and/or assignments required for graduate credit. May include evening exams.
Prereq: ACCT 483 .

ACCT 492 Auditing and Controls
3 credits
Value of the audit, concepts of attestation and relevant reporting, theories of evidence, development of risk analysis approach to auditing, with emphasis on internal and performance auditing; documentation and understanding of internal control structure, environment, system design, procedures and testing. May include evening exams.
Prereq: ACCT 305 and ACCT 315.

ACCT 498 Accounting Internship Program
1-3 credits, max 3
Formalized learning experience in an actual work setting. Students work within an accounting related field (accounting, auditing, and taxation) and commit to a minimum of 50 hours of direct supervised work for each semester credit. May include evening exams. This course does not count as an undergraduate accounting elective. Graded P/F.
Prereq: Senior status.

ACCT 499 (s) Directed Study
Credit arranged
Individual sections may be graded P/F.
Prereq: Permission.

ACCT 500 Master's Research and Thesis
1-6 credits, max 6.

ACCT 501 (s) Seminar
Credit arranged.

ACCT 502 (s) Directed Study
Credit arranged
Individual sections may be graded P/F.
Prereq: Permission.

ACCT 503 (s) Workshop
Credit arranged.

ACCT 504 (s) Special Topics
Credit arranged.

ACCT 505 (s) Professional Development
Credit arranged
Joint-listed with ACCT 405
Credit earned in these courses will not be accepted toward graduate degree programs.
Prereq: permission.

ACCT 515 Advanced Financial Accounting & Reporting
3 credits
Joint-listed with ACCT 415
Accounting and financial reporting for business combinations (including consolidated financial statements), international accounting issues, foreign currency translation, and accounting for partnerships. The course emphasizes the conceptual understanding of accounting for mergers and acquisitions as well as the technical requirements. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit.
Prereq: ACCT 325 or Graduate Standing.

ACCT 521 Accounting Data Analytics
3 credits
Joint-listed with ACCT 421
Role of accounting data analytics in the detection and assessment of fraud in an organizational setting. Topics include: definitions and detection of fraud; the application of data analytic and statistical techniques to detect different types of frauds; and the use of data analytics techniques in the audit function
Prereq: ACCT 315 .

ACCT 530 Accounting for Public Sector Entities
3 credits
Conceptual and procedural issues involving accounting, reporting, and auditing public sector organizations; topics include state and local governmental accounting principles, GASB/FASB jurisdiction over not-for-profit organizations, federal financial and performance auditing standards, and relevant current issues. May include evening exams.
Prereq: ACCT 315.

ACCT 540 Financial Statement and CSR Reporting Analysis
3 credits
Seminar on understanding and analyzing financial statements and corporate social responsibility (CSR) reports, including use of techniques to conduct financial statement analysis, understanding how to assess the quality of reporting information and modify that information to improve its quality, and constructing a valuation for a company.
Prereq: ACCT 315 .

ACCT 550 Fraud Examination
3 credits
Joint-listed with ACCT 440.
Fraud prevention, detection, investigation, and resolution. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit.
Prereq: ACCT 201.

ACCT 561 Comparative Accounting Theory
3 credits
Seminar on the theory and practice of corporate financial reporting and highlights the development of generally accepted accounting principles. The students will research and communicate recommendations regarding financial accounting reporting issues, using the authoritative accounting literature that underlies the financial accounting choices. May include evening exams. (Fall only)
Prereq: ACCT 415 or **Prereq or Coreq:** ACCT 515.

ACCT 582 Enterprise Accounting
3 credits
Joint-listed with ACCT 482
Carries no credit toward master's degree in accounting. Both business and non-business students will learn the critical role played by financial statements as entrepreneurs try to launch a new business. The trade-offs of various funding sources and their impacts on financial statements are also explored. Content will be presented in an integrated manner, rather than concept by concept, to emphasize the interrelatedness of forecasts and assumptions regarding revenues, costs, and financing on financial statements and thus, the resulting business model. Additional projects and/or assignments required for graduate credit. May involve evening exams.

ACCT 584 Federal Taxation of Entities
3 credits
Joint-listed with ACCT 484
Taxation of corporations and partnerships with emphasis on tax planning, tax research; the case method is used. Additional class meetings, projects, and/or assignments required for graduate credit. May include evening exams.
Prereq: ACCT 483 .

ACCT 585 Estate and Elder Planning
3 credits
Gift and estate tax consequences on property transfer during life and at death, tax research, and estate planning, elder planning and personal financial planning. Recommended preparation ACCT 484/ACCT 584. (Spring only)
Prereq: ACCT 483.

ACCT 586 Contemporary Management Accounting Issues
3 credits
Role of managerial accounting skills in supporting effective analysis and decisions in an organization. Synthesis of these managerial accounting skills through case analysis, as well as written and oral reports. Topics include the Balanced Scorecard; determining and assigning costs usingactivity based costing, budgeting and financial control; enterprise accounting system design and control. May include evening exams.

ACCT 590 Advanced Auditing Seminar
3 credits
Independent auditor's role, legal responsibilities, and code of conduct; concepts, standards, and methods in audit judgment formulation. (Spring only)
Prereq: ACCT 492.

ACCT 592 Financial Accounting and Reporting Seminar
3 credits
Seminar course designed to strengthen a student's ability to interpret financial statements and their related footnote disclosures through the examination of financial reporting issues from a user's perspective. Discussions also include managers' incentives and ability to exert discretion over reported earnings and the interplay between a company's corporate strategy and its financial reporting policies and practices. May include evening exams. (Spring only)
Prereq: ACCT 415 or **Prereq** or **Coreq:** ACCT 515 .

ACCT 595 Practicum in Tutoring
1 credit
Tutorial services performed by advanced students under faculty supervision. A paper discussing the tutoring experience is required.
Prereq: Permission .

ACCT 598 (s) Internship
1-3 credits, max 3
Career relevant learning experience in actual work setting with professional-level responsibilities. Students work within an accounting related field (accounting, auditing, and taxation) and commit to a minimum of 50 hours of direct supervised work for each semester credit. A paper documenting relevance of work experience and a presentation to undergraduate accounting students may be required.

ACCT 599 (s) Non-thesis Master's Research
1-6 credits, max 6
May count only 3 cr toward degree. Student works with individual professor to design a research study, collect and analyze data, and prepare written report.
Prereq: At least one course in research methodology and permission.

ADULT, ORG LEARNG AND LDRSHP (AOLL)

AOLL 203 (s) Workshop
Credit arranged.

AOLL 299 (s) Directed Study
Credit arranged.

AOLL 400 (s) Seminar
Credit arranged.

AOLL 403 (s) Workshop
Credit arranged.

AOLL 404 (s) Special Topics
Credit arranged.

AOLL 405 (s) Professional Development
Credit arranged.

AOLL 499 (s) Directed Study
Credit arranged.

AOLL 500 Master's Research & Thesis
Credit arranged.

AOLL 501 (s) Seminar
Credit arranged.

AOLL 502 (s) Directed Study
Credit arranged.

AOLL 503 (s) Workshop
Credit arranged
Graded P/F.
Prereq: Permission.

AOLL 504 (s) Special Topics
Credit arranged.

AOLL 505 (s) Professional Development
Credit arranged
Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward grad degree program, but may be used in a fifth-year program. Additional projects/assignments reqd for grad cr.

AOLL 507 Future of Education and Work
3 credits
Study and application of secondary and postsecondary curriculum and instruction focusing on sustainability as it relates to technical education, workforce and organizational development, "green" technologies and Science, Technology, Engineering and Mathematics (STEM).

AOLL 510 Foundations of Human Resource Development
3 credits
Advanced study of the foundations and basis for workforce and human resource education programs. (Alt/yrs)

AOLL 526 Instructional Design and Curriculum
3 credits
An in-depth examination and implementation of instructional design systems and curriculum development as a systematic method of designing, carrying out, and evaluating the total process of teaching and learning; based on research in human learning and communication, employing a combination of human and non-human resources to bring about effective instruction. Focused on corporate training as related to HRD in Adult Ed.

AOLL 528 Program Planning, Development, and Evaluation
3 credits
Program planning and development strategies for learning enterprise workers.

AOLL 560 Career Development in Organizations
3 credits
Builds upon the foundation of personality psychology, genetic research, and modern neuroscience in understanding the complex process of career decision-making.

AOLL 570 Introduction to Research in Adult/Organizational Learning and Leadership
3 credits
The first emphasis of this course is to help workforce education students find, interpret and evaluate scholarly research. The second emphasis is to prepare students to conceptualize, design, and conduct various forms of action research.

AOLL 573 Adult Learners: Foundations and Characteristics
3 credits
Philosophical, psychological, social and economic foundations of adult education and characteristics of adult learners.

AOLL 574 Adult and Transformational Learning
3 credits
Transformative learning theory is an essential part of this course. The best practices for reflecting upon existing personal, organizational, environmental, and social sustainability mental models and questioning norms are explored and practiced. Cognitive, humanistic, social learning, behavioral, constructivist, and developmental learning theories for adults are foundational elements of the course.

AOLL 575 Strategies for Facilitating Adult Learning
3 credits
Strategies for planning and facilitating adult learning courses and programs including face-to-face, hybrid and on-line delivery.

AOLL 577 Organization Development
3 credits
Planned change strategies for human resources in organizations; motivation, training/re-training, assessing, and crafting the corporate culture through educational efforts; assessing the knowledge skill gaps in the human resources.

AOLL 581 Theory & Practices & Challenges of Leadership
3 credits
Analysis and study of leadership of the human resource in organizations; theories, styles, and methods of leadership developed from past leaders blended with current models of leadership.

AOLL 583 Organizational Leadership
3 credits
Development of an understanding of groups, group behavior, development and socialization of groups, and nature of power, conflict, and leadership in groups; intended for adults who spend time with other adults in groups, committees, teams, or other relationship configurations; emphasis on leadership aspects of group behavior and participation.

AOLL 597 (s) Practicum
Credit arranged
Supervised field experience in an appropriate public or private agency. Graded P/F.
Prereq: Permission.

AOLL 598 (s) Internship
Credit arranged
Supervised experience in teacher education, administration, supervision, or ancillary services in adult education. Graded P/F.
Prereq: Permission.

AOLL 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

AOLL 600 Doctoral Research & Thesis
Credit arranged.

AEROSPACE STUDIES (AERO)

AERO 101 Foundations of the U.S. Air Force
1 credit
Survey course that introduces students to the United States Air Force and the Air Force Reserve Officer Training Corps (AFROTC). The course primarily focuses on the mission and organization of the Air Force, Air Force dress and appearance standards, military customs and courtesies, Air Force heritage and introduction to communication skills. Weekly lab consisting of Air Force customs and courtesies, health and physical fitness, and drill ceremonies is mandatory for cadets. (Fall only)

AERO 102 Foundations of the U.S. Air Force
1 credit
Survey course that introduces students to the United States Air Force and the Air Force Reserve Officer Training Corps (AFROTC). The course primarily focuses on the mission and organization of the Air Force, Air Force dress and appearance standards, military customs and courtesies, Air Force heritage and introduction to communication skills. Weekly lab consisting of Air Force customs and courtesies, health and physical fitness, and drill ceremonies is mandatory for cadets. (Spring only)

AERO 103 Leadership Laboratory I
2 credits, max 4
Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.
Coreq: AERO 101 or AERO 102.

AERO 201 Evolution of U.S. Air Force Air and Space Power
1 credit
Survey course that presents an overview of the history of the Air Force and key airpower concepts, development of the U.S. Air Force and its guiding principles, the employment of airpower from the advent of manned flight through the post-World War II period to current air and space operations and continued application of communication skills. Weekly lab of applied leadership exercises is required for cadets. (Fall only)

AERO 202 Evolution of U.S. Air Force Air and Space Power
1 credit
Survey course that presents an overview of the history of the Air Force and key airpower concepts, development of the U.S. Air Force and its guiding principles, the employment of airpower from the advent of manned flight through the post-World War II period to current air and space operations and continued application of communication skills. Weekly lab of applied leadership exercises is required for cadets. (Spring only)

AERO 205 Leadership Laboratory II
2 credits, max 4
Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.
Coreq: AERO 201 or AERO 202.

AERO 299 (s) Directed Study
Credit arranged.

AERO 311 Air Force Leadership and Management
3 credits
Leadership and quality management fundamentals, professional knowledge, leadership ethics, and communicative skills required of an Air Force officer; case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied; a weekly lab provides advanced leadership experience in officer-type activities, giving students the opportunity to apply leadership and management principles of this course (the lab is mandatory for cadets). (Fall only)

AERO 312 Air Force Leadership and Management
3 credits
Leadership and quality management fundamentals, professional knowledge, leadership ethics, and communicative skills required of an Air Force officer; case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied; a weekly lab provides advanced leadership experience in officer-type activities, giving students the opportunity to apply leadership and management principles of this course (the lab is mandatory for cadets). (Spring only)

AERO 313 Leadership Laboratory III
2 credits, max 4
Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.
Coreq: AERO 311 or AERO 312.

AERO 391 Private Pilot Ground School
2 credits
All aspects of preparation for the FAA Private Pilot Written Test. Additional fees will be required. Cooperative: open to WSU degree-seeking students.

AERO 404 (s) Special Topics
Credit arranged.

AERO 411 National Security Affairs/Preparation for Active Duty
3 credits
An examination of the national security process, regional studies, advanced leadership ethics, and Air Force doctrine; focus of the military profession, officership, military justice, civilian control of the military, preparation for active duty, and refinement of communication skills; a lab consisting of advanced leadership experiences is mandatory for cadets. (Fall only)

AERO 412 National Security Affairs/Preparation for Active Duty
3 credits
An examination of the national security process, regional studies, advanced leadership ethics, and Air Force doctrine; focus of the military profession, officership, military justice, civilian control of the military, preparation for active duty, and refinement of communication skills; a lab consisting of advanced leadership experiences is mandatory for cadets. (Spring only)

AERO 413 Leadership Laboratory IV
2 credits, max 4
Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.
Coreq: AERO 411 or AERO 412.

AERO 499 (s) Directed Study
Credit arranged.

AFRICANA STUDIES (AFST)

AFST 101 Introduction to Africana Studies
3 credits
Gen Ed: International
This course provides an introduction to Africana Studies. Specifically, it will examine aspects of African History, Contemporary African politics, the creation of the diaspora, contemporary race relations, Africana literature, and Africana music. It will incorporate theories on African development, globalization, and racial formation as it explores these topics. This course will be cotaught by affiliated faculty in the program, each presenting on their area of expertise.

AGRICULTURAL AND LIFE SCIENCES (AGLS)

AGLS 200 (s) Seminar
Credit arranged
Prereq: Permission.

AGLS 204 (s) Special Topics
Credit arranged.

AGLS 298 (s) Internship
Credit arranged.

AGLS 299 (s) Directed Study
Credit arranged
Prereq: Departmental Permission.

AGLS 398 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: Permission.

AGLS 400 (s) Seminar
Credit arranged
Prereq: Departmental Permission.

AGLS 403 (s) Workshop
Credit arranged.

AGLS 404 (s) Special Topics
Credit arranged
Prereq: Departmental Permission.

AGLS 405 (s) Professional Development
Credit arranged.

AGLS 494 CALS Peer Leaders
1 credit, max 6
The CALS Peer Leaders provide students the opportunity to further develop leadership and mentoring skills through a variety of activities involving student mentoring. The objective is to integrate students into college life; create awareness of the academic programs; and be available to guide students by fostering department and college engagement.
Graded A/Pass/Fail.
Prereq: Departmental Permission.

AGLS 495 (s) CALS Ambassadors
Credit arranged
Student ambassadors are selected through an application and interview process to represent CALS to future students at recruiting activities and functions. Students will learn skills in leadership, communication, networking, public speaking, and time management. Students will be responsible for visiting high schools, attending college and career fairs, recruiting events on campus.
Prereq: Departmental Permission.

AGLS 498 (s) Internship
Credit arranged.

AGLS 499 (s) Directed Study
Credit arranged
Prereq: Departmental Permission.

AGLS 504 (s) Special Topics
Credit arranged.

AGLS 505 (s) Professional Development
Credit arranged.

AGRICULTURAL ECONOMICS (AGEC)

AGEC 101 The Business of Agriculture
1 credit
This course is intended for first-year students majoring in Agribusiness or Agricultural Economics. An examination of current issues in agriculture and how economic and business principles can be used to analyze issues, and career opportunities in the discipline.

AGEC 105 Survey of Agribusiness
1-3 credits, max 3
Introduction to agribusiness management and consumer economics in the free enterprise system. Incorporates a study of economic principles, budgeting, record keeping, finance, decision making, risk management, business law, marketing, and careers in agribusiness, and allows the student to develop and practice agribusiness sales competencies. Course will be offered for 1 credit in the Fall and 2 in the Spring.

AGEC 204 (s) Special Topics
Credit arranged.

AGEC 278 Farm and Agribusiness Management
4 credits
Decision making and profit maximization using economic principles, records, enterprise analysis, and comparison of alternative farming practices. Three lec and one 2-hr lab a wk. Recommended Preparation: ECON 202.

AGEC 289 Agricultural Markets and Prices
3 credits
Economics of agricultural markets and pricing institutions; analysis of supply, demand, elasticity, futures markets; institutional arrangements in food marketing. Recommended Preparation: ECON 202.

AGEC 299 (s) Directed Study
Credit arranged.

AGEC 301 Managerial Economics: Production
3 credits
Microeconomic principles applied to agricultural production and the management of agribusiness firms with an introduction to spreadsheet based statistical, mathematical and optimization techniques for analyzing and solving real world management problems.
Prereq: ECON 202 or ECON 272; and MATH 143 with a grade of 'C' or better .

AGEC 302 Managerial Economics: Consumption & Markets
3 credits
Microeconomic principles applied to agricultural markets and consumer demand, with an introduction to spreadsheet based statistical and forecasting tools for analyzing associated real world pricing and consumer demand concerns facing managers of agribusiness firms.
Prereq: ECON 202 or ECON 272; and MATH 143 .

AGEC 303 Principles of Agricultural Economics
1 credit
Review, discussion and application of basic economic, agribusiness, and natural resource principle as applied to the agricultural economics profession. The principles are reviewed in a game show format. Students will have an opportunity to attend the American Agricultural Economics Association annual meetings and test their knowledge of these principles with students from other universities. Recommended preparation: AGEC 301 and AGEC 302. (Spring only)
Prereq: AGEC 101 and AGEC 278; and ECON 272 or ECON 201 and ECON 202 .

AGEC 333 Introduction to Sales
3 credits
Introduction to the economic and consumer behavior theory of the sales industry. Fundamentals of professional business-to-business selling, business-to-consumer selling, sales ethics, and career assessment. (Spring only)

AGEC 356 Agricultural and Rural Policy
3 credits
Goals, methods, results of economic programs and policies in agriculture, including role of governmental and farm organizations. Recommended Preparation: ECON 201 and 202.

AGEC 385 Environmental Economics
3 credits
Cross-listed with ECON 385
Theory of externalities and public goods, and application of economic principles to environmental issues.
Prereq: ECON 202 or ECON 272 or Permission .

AGEC 398 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: Permission.

AGEC 404 (s) Special Topics
Credit arranged.

AGEC 405 (s) Professional Development
Credit arranged.

AGEC 410 Experiencing the Idaho Public Policy Making Process
1 credit
Assessment of policy topics currently facing the agricultural industry. Students will travel to Boise while the legislature is in session to become familiar with the policy making process and to discuss current policy issues with industry and legislative officials. Three, three hour evening classes. (Spring Only)
Prereq: AGEC 356 or permission.

AGEC 411 The World of International Agribusiness
1 credit
Draws on the experience and wisdom of practitioners of international businesses engaged in various fields of agriculture. Examination of current trade practices and issues. (Fall only)
Prereq: Junior standing.

AGEC 413 Management of Human Resources in Agribusiness Firms
1 credit
Processes involved in the management of the human resources of organizations and the study of the personal attributes and behaviors associated with successful managers. Five week course. Three hours of lec per week. (Fall Only)
Prereq: Junior standing.

AGEC 414 Financial Analysis of Agricultural Firms
3 credits
Applying cost analysis and three financial statements analysis to the management of an agricultural business. Evaluating relative performance of agricultural firms by using financial ratios, ride-on investment evaluation (by employing Net Present Value and Internal Rate of Return), leasing vs. buying, and financial modelling (proforma statement) for agricultural firms. Examination of cost and accrual based income statement for tax and management decisions. Create a cash flow statement for agricultural firms based on the income and balance sheet statements. Three hours of lec per week. (Fall Only)
Prereq: ACCT 201 and AGEC 278, or permission.

AGEC 415 Entrepreneurial Skills in Agribusiness Management
1 credit
An examination of fundamental entrepreneurial responsibilities of managers in agricultural and natural resource based firms. Identification and development of business goals, tactical and strategic plans, environmental assessment, and decision-making. Five week course. Three hours of lec per week. (Fall Only)
Prereq: AGEC 278 or permission.

AGEC 417 Risk Management in Agriculture
1 credit
Identification of risks facing agricultural based firms. Assessment of risk management tools and strategies (e.g. agriculture insurance programs and enterprise diversification) as applied to decision making. Five week course. Three hours of lec per week. (Spring Only)
Prereq: AGEC 278, and AGEC 301 or AGEC 302.

AGEC 418 Developing Negotiation Skills in Agribusiness
1 credit
Understanding the art and science of securing agreements between two or more independent parties by managing interdependence, engaging in mutual adjustment, creating or claiming value, and managing conflict. (Spring only)
Prereq: Junior or Senior standing .

AGEC 419 Development and Analysis of Enterprise Budgets
1 credit
Examination of accounting and economic costs and their importance in enterprise cost analysis. Identification and allocation of operating and ownership costs to enterprises. Introduction to software packages used in the development of cost and return estimates. (Spring only)
Prereq: AGEC 278 or Permission .

AGEC 433 Advanced Sales
3 credits
Building on principles of professional sales and sales management, students will learn additional processes, procedures and practices of sales professionals. Students will apply the old and new concepts when selling a product to be determined to actual customers.
Prereq: AGEC 333 .

AGEC 447 International Development Economics
3 credits
Gen Ed: International
Cross-listed with ECON 447 and LAS 447.
Characteristics of development; historical perspective; macroeconomic theories and policies: models of growth, poverty, inequality, trade, aid and debt; microeconomic theories and policy: health, nutrition and education, agriculture, rural markets for land, labor and credit, and corruption
Prereq: ECON 201 and ECON 202; or ECON 272; or Permission .

AGEC 451 Applied Environmental and Natural Resource Economics
3 credits
Economic analysis of current issues pertaining to environmental and natural resources. Economic tools will be applied in the contexts of climate change, valuation of the environment, sustainable development, energy, water, environmental risk, etc. Specific cases used to describe economic theories and tools used by experts working in the field.
Prereq: AGEC 301 or AGEC 302, or ECON 351 or ECON 352, or by Permission.

AGEC 468 Risk Management: Commodity Merchandising
1 credit
Fundamental functions of a commodity merchandiser within the agricultural food supply chain, including risk management through basis trading and margin management of a hedged marketing position, are learned through utilizing actual cash grain ownership and exchange-traded futures. One credit lab also engages students directly with regional grain trade, commodity brokers and allied industries.

AGEC 469 Risk Management: Commodity Trading
1 credit
One-credit lab which engages students in the actual trading of agricultural commodity futures and options. Course emphasizes concepts, tools and strategies as they relate to identifying trading opportunities across agricultural commodities, managing portfolio risk and increasing operational profits through implementing trading positions in commodity futures markets.
Prereq: Instructor Permission .

AGEC 477 Law, Ethics and the Environment
3 credits
Joint-listed with AGEC 577
Examines the laws and related ethical questions pertaining to agricultural and natural resource issues. Graduate credit includes special projects and additional discussion meetings. Recommended Preparation: BLAW 265.
Prereq for 477: Junior standing
Prereq for 577: Graduate standing and FOR 235 or POLS 364; or Permission .

AGEC 478 Advanced Agribusiness Management
3 credits
Gen Ed: Senior Experience
The capstone class for Agribusiness and Agricultural Economic students. Economics and agribusiness theory is put into practice through decision cases. Team building, written, and oral presentation skills are stressed. The course includes a one-hour lab to facilitate group work and instructor-group interaction. (Spring Only)
Prereq: AGEC 301, AGEC 302, ACCT 201, ACCT 202, and Senior standing; or permission.

AGEC 481 Agricultural Markets in a Global Economy
3 credits
Gen Ed: International
Analysis of agricultural market competition and performance in a global economy; economics of global food and commodity markets and trade; economic principles applied to interaction of economic events in the world food economy.
Prereq: AGEC 301 or ECON 352 or permission.

AGEC 489 Understanding and Using Futures and Options Markets
3 credits
How futures and options markets work, types of futures and options markets, a practical understanding of their role as investment and risk management tools, and individual student management of a simulated futures and options trading account.
Prereq: MATH 143 or higher, and ECON 202 or ECON 272.

AGEC 489L Applied Commodity Market Analysis Lab
1 credit
The lab builds upon agricultural marketing risk-management concepts introduced in AGEC 489 – "Understanding and Using Futures and Options Markets". Students will develop spreadsheets containing historical supply and demand data along with actual cash and futures price series on chosen commodity sectors. Appropriate tools and methodologies will then be applied to analyze historical patterns, parameters, basis, seasonality and charting techniques. Lab material coverage will coincide with homework assigned in AGEC 489. Dataset, analytical tools, and actual futures trading platform will then be utilized to develop an applied risk-management hedging program.
Coreq: AGEC 489 .

AGEC 490 Commodity Price Analysis
3 credits
Methods used to analyze factors affecting agricultural prices, analysis of agricultural prices and price movements with respect to time, space, and form, and examination of methods of price forecasting and techniques of time series analysis.
Prereq: STAT 251, AGEC 489 or FIN 466, AGEC 289 .

AGEC 497 Teaching Ag Econ/Agribusiness
1-3 credits
Supervised class observation and course preparation, and an opportunity to present one or several lectures in specific agribusiness and agricultural economics areas. Incorporates learning and teaching methods applied in professional settings; may include advanced practices for competitions, field or lab activities, and client interactions. Max enrollment 5. Recommended preparation: senior standing.
Prereq: Permission .

AGEC 498 (s) Internship
Credit arranged.

AGEC 499 (s) Directed Study
Credit arranged.

AGEC 500 Master's Research and Thesis
Credit arranged.

AGEC 501 (s) Seminar
Credit arranged.

AGEC 502 (s) Directed Study
Credit arranged.

AGEC 504 (s) Special Topics
Credit arranged.

AGEC 505 (s) Professional Development
Credit arranged.

AGEC 506 Faculty Seminar Series
0 credits
Focus on current issues impacting agriculture, natural resources, and community development though seminars introducing research occurring in the department.

AGEC 525 Master's Econometrics
3 credits
Cross-listed with STAT 525.
Multivariate linear regression and analysis of variance with economic applications. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 431 or equivalent; or Permission of Instructor .

AGEC 526 Master's Microeconomics Analysis
3 credits
Master-level, calculus-based producer and consumer theory with selected managerial economics topics. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: Permission .

AGEC 527 Mathematics for Economists
3 credits
Mathematical methods applicable to economic analysis and research. Cooperative course available to WSU degree-seeking students. (Fall only)
Prereq: ECON 352 and MATH 160 or MATH 170 .

AGEC 529 Research Methods
1-2 credits
Social science Master's thesis as a research journey toward craftsmanship including elements of imagination, modeling, mindfulness, guidelines, and mentor experiences. Cooperative: open to WSU degree-seeking students.
Prereq: Graduate standing and Permission .

AGEC 532 Natural Resource Economics and Policy
3 credits
Economic principles and models applied to natural resource problems, issues, and policies. Cooperative: open to WSU degree-seeking students. (Spring Only)
Prereq: ECON 352 or Permission .

AGEC 533 International Trade and Policy
3 credits
International trade theories and policies and research issues related to world trade, with emphasis on agricultural commodity markets. Cooperative: open to WSU degree-seeking students. (Spring Only)
Prereq: ECON 446, AGEC 481, or Permission.

AGEC 534 Production Economics
3 credits
Production economics theory and methods applied to problems of production response, economic optimization, technology, policy, risk and dynamics. Cooperative: open to WSU degree-seeking students.
Prereq: AGEC 526 or Permission .

AGEC 535 Applied Industrial Organization
3 credits
Economic and strategic management theories and their relevance to agribusiness decision-making, including empirical applications. Cooperative: open to WSU degree-seeking students. (Fall only)

AGEC 577 Law, Ethics and the Environment
3 credits
Joint-listed with AGEC 477, Cross-listed with ENVS 577
Examines the laws and related ethical questions pertaining to agricultural and natural resource issues. Graduate credit includes special projects and additional discussion meetings. Recommended Preparation: BLAW 265.
Prereq for ENVS 577: Graduate standing and FOR 235 or POLS 364; or Permission.

AGEC 586 Regional Economic Development Theory
3 credits
Joint-listed with AGEC 486
Theory course in the explanation and causes of regional economic growth and community development. Topics include land economics, transportation models, central place theory, location theory, agglomeration, economic base theory, and economic growth theory. Additional projects/assignments required for graduate credit. Recommended Preparation: Introductory Microeconomics and Macroeconomics or Introduction to Bioregional Planning. (Spring only)

AGEC 587 Regional Economic Development Methods
3 credits
Methods course in the tools of regional economics and community development. Topics include Community Economic Profiling, Input-Output Analysis, Social Accounting, General Equilibrium Analysis, Social Benefit-Cost Analysis, and Non-Market Valuation. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: AGEC 586 or Permission .

AGEC 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: permission.

AGRICULTURAL EDUCATION (AGED)

AGED 140 Introduction to Organizational and Personal Leadership Development
1 credit
This course is designed to introduce the student to important concepts in organizational and personal leadership development. Topics will include organizational leadership, citizenship, and cooperation, personal development, employee/employer relations, and group and individual interpersonal communications skills.

AGED 158 Introduction to Supervised Agricultural Experience Programs
1 credit
This course is designed to introduce the student to important concepts in conducting and organizing supervised agricultural experience projects related to secondary agricultural education classroom and local FFA chapter. Topics will include project planning, goal setting, budgeting, record keeping, basic technical writing, project/program evaluation, employability skills, citizenship, employee/employer relations, and group and individual interpersonal communication skills. (Spring only)

AGED 159 Introduction to the FFA Organization
1-2 credits
This course is designed to introduce the student to important concepts in conducting, organizing, and competing in activities inherent in the Idaho and National FFA Organizations as an outgrowth of the secondary agricultural education classroom instruction and coupled with a successful supervised agricultural experience program. Topics will include parliamentary procedure, FFA History and activities, public speaking and communications, project planning, goal setting, budgeting, record keeping, basic technical writing, project/program evaluation, employability skills, citizenship, employee/employer relations, and group and individual interpersonal communication skills. (Spring only)

AGED 160 Survey of the Expectations and Responsibilities of Teaching High School Agriculture
1 credit, max 2
This course is designed for high school students interested in pursuing a career in agricultural education and will serve as a bridge class between high school and collegiate level teacher education courses. The course will include an exploration of the professional qualities and expectations of the teacher/educator. Roles, responsibilities and challenges in the field of education, leadership, and communication will be examined.

AGED 180 Introduction to Agricultural Education
1 credit
Overview of the goals, mission, and purpose agricultural education programs in High Schools. Course content will include topics related to career opportunities in Agricultural Education, key issues facing agricultural education programs in high schools at the local, state, and national levels; the importance of agricultural education to society; and the role of the agricultural educator in schools and communities. (Fall only)

AGED 200 (s) Seminar
Credit arranged
Prereq: Permission.

AGED 204 (s) Special Topics
Credit arranged.

AGED 251 Principles of Agricultural Communications and Leadership
3 credits
This course prepares individuals to serve in leadership and communication roles in agriculture. Course topics will include an examination of the journalistic, communication and broadcasting principles to develop and disseminate agricultural information, along with leadership principles related to leadership theory and personal leadership development.

AGED 258 Experiential Learning and SAE Programs
1 credit
This course addresses the role of experiential learning in Agricultural Education programs. A sound understanding and application of these programs is essential to the success of the local program. The emphasis of the course will be to provide students with supervised experience in agriculture. Record keeping skills will be developed to assist the student in planning, decision-making, and reporting.

AGED 299 (s) Directed Study
Credit arranged.

AGED 301 (s) Undergraduate Research
1-3 credits, max 3
Undergraduate research for students in agricultural education.
Prereq: Instructor Permission .

AGED 350 Leadership Event Coordination
1 credit
This course introduces students to the planning and implementation of leadership activities for the FFA - Career & Technical Student Organization. Students will use leadership, communications, and teambuilding skills to plan leadership and career development events (CDE/LDE), awards ceremonies, educational workshops, and stakeholder activities as part of the Idaho FFA State Leadership Conference (travel required). Students will collaborate with stakeholder groups including the Idaho FFA Association, Idaho FFA Alumni, Idaho FFA Foundation, Idaho Agriculture Teachers Association (IATA), and the Idaho Division of Career and Technical Education.

AGED 351 Career and Technical Education
3 credits
Overview and interpretation of history, aims, and purposes of public education and career and technical education, issues and programs comprising education in Idaho and the U.S.

AGED 358 Supervising FFA and SAE Programs
3 credits
Role of secondary agriculture instructors in supervising FFA and Supervised Agricultural Experience programs. One lecture and one 2-hr lab a week. (Fall only)
Prereq: Agricultural Education major, and Permission
Prereq or Coreq: AGED 180 .

AGED 359 Developing 4-H Youth Programs
2 credits
Planning, development, and leadership principles of 4-H/youth program; role of 4-H/youth educator and volunteer leader. Web-based course.

AGED 398 (s) Internship

AGED 400 (s) Seminar
Credit arranged.

AGED 403 (s) Workshop
Credit arranged.

AGED 404 (s) Special Topics
Credit arranged.

AGED 405 (s) Professional Development
Credit arranged.

AGED 406 Exploring International Agriculture
3 credits
Gen Ed: International
General overview of agriculture around the world and the opportunity to develop an in-depth knowledge of agriculture in a country or region of student's choice. (Spring only)
Prereq: Junior or Senior standing; and AGED 180, ASM 112, or SOIL 205; or Permission .

AGED 407 Global Agricultural & Life Sciences Systems
3 credits, max 9
This course will introduce students to the history, culture, economy and agricultural systems of a selected foreign country emphasized through a planned short-term international field experience. Through study and travel to the select country, students will be exposed to the history of the country, important cultural sites, production agriculture field operations, agricultural business enterprises, and international agricultural markets. Students will participate in educational and pre-trip informational sessions along with post-trip debriefing, class discussions, completing reports and developing presentations for other CALS classes and clubs about their experience.

AGED 448 Foundations of Extension Education
2 credits
Joint-listed with AGED 548.
Philosophy and principles, social and economic significance of extension education in agricultural and life sciences and the examination of behavioral science concepts in organization, development, and management of extension programs. Credit earned in AGED 548 by completion of in-depth paper or project on some aspect of extension programming. (Fall, alt/yrs)

AGED 450 Leading People and Teams
3 credits
Joint-listed with AGED 550, Cross-listed with CLDR 450
This course focuses on leadership and communication in groups and teams through an exploration of team-based leadership and shared visions. Students will develop a better understanding of themselves as leaders and followers and the role of others as leaders and followers within a community. Topics include: community-based models and theories related to effective groups and teams, processes of teams, team management, relationships in teams, creating a shared mission and vision amongst members, improving and evaluating team performance, determining leadership strategies based on team dynamics, and shared leadership. Recommended preparation: AGED 251 .

AGED 451 Communicating in Agriculture
3 credits
Principles and practices of disseminating knowledge and information related to agricultural sciences, environment, and natural resources to clients and the general public; communications concepts, technology, and presentation skills that will help agricultural and natural resource professionals communicate effectively within their chosen profession.

AGED 452 Methods of Teaching Agriculture
4 credits
Procedures of identifying and selecting instructional methods and materials, planning, and student evaluation criteria to effectively teach agriculture. (Fall only)
Prereq: AGED 180, Agricultural Education major, and Permission
Prereq or Coreq: AGED 358.

AGED 453 Program Planning in Secondary Agricultural Education
3 credits
Planning, organizing, and implementing secondary programs in agriculture. This course is to be taken during the student teaching semester. (Spring only)
Prereq: AGED 452, Agricultural Education major, and Permission.

AGED 454 Facilities Organization and Management
2 credits
Applications of efficient planning, organizing, and teaching skills reqd in management of lab and shop facilities.
Prereq: AGED 180, Agricultural Education major, and Permission
Prereq or Coreq: AGED 358 .

AGED 460 Practicum: Secondary School Teaching in Agriculture
10 credits
Fifteen (15) wks of practical experience student teaching in secondary agriculture program. (Spring only)
Prereq: Admission to the Teacher Education Program, and perm of dept.

AGED 461 Student Teaching Portfolio
2 credits
Summary of the 15-week practicum experience; a notebook portfolio to include unit lesson plans, daily teaching plans, video example of teaching, report of early field experience, daily journal, summary of 10 positive and 10 challenging teaching experiences, supervisory assessments of teaching by cooperating instructor and university supervisor, and cooperating teacher's final evaluation. (Spring only)

AGED 470 Proseminar in Agricultural Education
1 credit
Professional issues in agricultural education. Fall semester includes additional 8-hour Saturday session for CPR and first aid training.
Prereq: Admission to Teacher Education Program, or Permission of department.

AGED 471 Senior Capstone in Agricultural Education
1 credit
Gen Ed: Senior Experience
This course serves as the senior capstone course for the Bachelors of Science degree in Agricultural Education. The course meetings will include a meeting during the Idaho FFA State Leadership Conference in April, a final presentation, and a senior capstone debriefing meeting at the end of the student-teaching field-experience.
Prereq: AGED 470
Coreq: AGED 460 and AGED 461 .

AGED 481 Adv Ag Comm and Ldrship
3 credits
This course is a culmination of the comprehensive knowledge gained in agricultural communications and leadership that infuses reflection with a real-life application of learned tools and skills. Designed for students to engage with a community organization or business to complete a full organizational analysis and design a communications campaign. The course results in the development of a portfolio.
Prereq: AGED 251, AGED 450, AGED 451 .

AGED 498 (s) Internship
1-10 credits, max 10
Gen Ed: Senior Experience
Formalized learning experience in an actual work setting. Students work in an agriculturally related organization or agency and commit to a minimum of 40 hours of supervised work per semester credit. Requires completion of a formal proposal.
Prereq: Junior or Senior standing; GPA of 2.75 and Permission.

AGED 499 (s) Directed Study
Credit arranged.

AGED 500 Master's Res & Thesis
Credit arranged.

AGED 501 (s) Seminar
Credit arranged.

AGED 502 (s) Directed Study
Credit arranged.

AGED 503 (s) Workshop
Credit arranged.

AGED 504 (s) Special Topics
Credit arranged.

AGED 505 (s) Professional Development
Credit arranged.

AGED 548 Foundations of Extension Education
2 credits
Joint-listed with AGED 448.
Philosophy and principles, social and economic significance of extension education in agricultural and life sciences and the examination of behavioral science concepts in organization, development, and management of extension programs. Credit earned in AGED 548 by completion of in-depth paper or project on some aspect of extension programming. (Fall, alt/yrs)

AGED 550 Leading People and Teams
3 credits
Joint-listed with AGED 450.
This course focuses on leadership and communication in groups and teams through an exploration of team-based leadership and shared visions. Students will develop a better understanding of themselves as leaders and followers and the role of others as leaders and followers within a community. Topics include: community-based models and theories related to effective groups and teams, processes of teams, team management, relationships in teams, creating a shared mission and vision amongst members, improving and evaluating team performance, determining leadership strategies based on team dynamics, and shared leadership. Recommended preparation: AGED 251 .

AGED 560 Beginning Teacher Induction in Agricultural Education I
1 credit, max 2
This course is designed to develop an understanding and application of teaching agriculture using the three-circle model. The course is taught using on-site clinical supervision, technical assistance, leadership, follow-up and support to beginning teachers of secondary agricultural education program. (Fall only)

AGED 561 Beginning Teacher Induction in Agricultural Education II
1 credit
This course is designed to develop an understanding and application of teaching agriculture using the three-circle model. The course is taught using on-site clinical supervision, technical assistance, leadership, follow-up and support to beginning teachers of secondary agricultural education program. (Spring only)

AGED 562 Instructional Methods in Agricultural Education
3 credits
Innovations and advanced principles in teaching methods and materials.

AGED 563 History and Philosophy of Agricultural and Extension Education
3 credits
This course will review the development and growth of land-grant universities, agricultural experiment stations, the cooperative extension system, secondary and post-secondary agricultural programs, and the 4-H and FFA youth development organizations. Participants will conduct historical research and prepare a historical research manuscript for publication.

AGED 564 Curriculum Development in Agricultural Education
3 credits
Design and development of data based curriculum and curriculum evaluation procedures in agricultural and extension education. Critique of curriculum development models, contemporary trends and issues, curriculum resources and accountability tools. Analysis of the use of national and state standards as well as local community needs in curriculum development .

AGED 565 Program Planning and Evaluation in Agricultural Education
3 credits
This course is designed to develop an understanding of Program Planning and Evaluation relevant to secondary agricultural education. Theories of program planning, evaluation principles, models, and procedures used in developing and analyzing agricultural education programs, conducting needs assessments, and the marketing of outcomes to major stake-holders .

AGED 566 Advanced Philosophies of Teaching & Learning in Agricultural Education
3 credits
Foundations and theories of teaching and learning with emphasis on applications in the secondary agricultural education classroom. Emphasis will be placed upon behavioral, social cognitive, cognitive, information processing, brain-based, constructivist, developmental, motivational, and transformational theories as they apply in contemporary agricultural education settings. Advanced teaching methods and pedagogies based on researched best-practices.

AGED 598 (s) Internship
Credit arranged.

AGED 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

AGRICULTURAL SYSTEMS MGT (ASM)

ASM 105 Survey of Agricultural Mechanics
1-3 credits, max 3
This course is designed to introduce the student to the principles of technology in agriculture. It includes the development of knowledge and skills pertaining to agricultural mechanics, welding, power technology, electricity, and structures. It will provide introductory learning experiences for students in the areas of agricultural systems management.

ASM 107 Beginning Welding
2 credits
Principles of operation, use, and care of arc and acetylene welding equipment. One lec, one 2-hr lab, and two hrs of individual practice a wk. Enrollment limited to 12 per section. Cooperative: open to WSU degree-seeking students.

ASM 112 Introduction to Agricultural Systems Management
3 credits
Application of basic engineering principles to solving problems dealing with farm machinery, buildings, processing, irrigation, and energy use. Recommended Preparation: high school algebra.

ASM 200 (s) Seminar
Credit arranged.

ASM 202 Agricultural Shop Practices
2 credits
Primarily for agricultural mechanization and agricultural education students. Operation, use, and care of shop tools and equipment. One lecture and one 3-hour lab a week.

ASM 204 (s) Special Topics
Credit arranged.

ASM 210 Small Engines
2 credits
Principles of engine operation, tune-up, and maintenance; repair and overhaul of small engines. One lecture, one 2-hour lab, and two hours of individual practice a week. Enrollment limited to 12 per section.

ASM 299 (s) Directed Study
Credit arranged.

ASM 305 GPS and Precision Agriculture
3 credits
This course will cover the fundamentals of global positioning, yield monitors, and variable rate applications. Instrumentation used in agriculture, environmental science, and industry will be discussed. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

ASM 315 Irrigation Systems and Water Management
3 credits
Irrigation methods, irrigation management, water rights, conveyance and measurement, pumps, soil-water-plant relationships, and drainage. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.
Prereq: SOIL 205, MATH 108, MATH 143, MATH 160 or MATH 170 or Permission.

ASM 331 Electric Power Systems for Agriculture
3 credits
Basic circuits; wiring and the code; motors and controls; heating, lighting, and power. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

ASM 398 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: Permission.

ASM 400 (s) Seminar
Credit arranged.

ASM 403 (s) Workshop
Credit arranged.

ASM 404 (s) Special Topics
Credit arranged.

ASM 407 Advanced Welding
1 credit
This course provides the student an opportunity to learn various advanced welding theories, practices and applications for ferrous and non-ferrous metals, which include Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) and Plasma Arc Cutting (PAC). These are only introduced in ASM 107, Beginning Welding, and will be covered in depth in this course. This course will also provide the student with a technical understanding of calculating material and use of proper procedures for the completion of project manufactured in the lab. Student presentations and demonstrations are required. This course will introduce emerging technologies in welding and fabrication industries.
Prereq: ASM 107 and Permission .

ASM 409 Agricultural Tractors, Power Units and Machinery Management
4 credits
This course focuses on the selection, operation, adjustment, and servicing of farm tractors and power units. Fuels, lubrication, cooling, and electrical systems will also be covered. Machinery operation, power transmission systems, hitching, traction, and safety are also discussed. The course will conclude with discussions on depreciation and machinery replacement. Three 1-hour lectures and one 3-hour lab a week.

ASM 412 Agricultural Safety and Health
2 credits
Covers a broad variety of items related to agricultural safety and health: identification of safety and health hazards, maximizing capabilities of farmers and ranchers with disabilities, grain and livestock handling, chemical and gases handling, and fire safety; corrective measures to eliminate hazards and application of information learned to student's own situation. (Alt/yrs)

ASM 433 Agricultural Processing Systems
3 credits
Grain cleaning, mixing, and drying; materials handling, heat transfer, pumps, fans, refrigeration, and instrumentation. Two lectures and one 3-hour lab a week; one 1-day field trip. Recommended Preparation: MATH 160.

ASM 498 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: Permission.

ASM 499 (s) Directed Study
Credit arranged.

AMERICAN INDIAN STUDIES (AIST)

AIST 101 Elementary Nez Perce I
4 credits
Cross-listed with NEZP 101
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.

AIST 102 Elementary Nez Perce II
4 credits
Cross-listed with NEZP 102
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.
Prereq: AIST 101.

AIST 110 Community Building
3 credits
This course is aimed towards first generation college students from indigenous communities. This course helps students build community support through existing programs at the university and facilitates students' connections with their tribal cultures. It also helps students develop good study habits and build study skills.

AIST 111 Intro to Success
1 credit
This course assists each student's academic, cultural, and social adjustment to the University. The course is also designed to provide supportive tools and resources to each student to ensure they are maximizing their ability. The course will focus on a few of the topic areas: time management, organization skills, tribal issues and tribal governmental structures, importance of diversity, learning styles, budgeting, and test taking.

AIST 201 Intermediate Nez Perce I
4 credits
Cross-listed with NEZP 201.
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.
Prereq: AIST 102 or NEZP 102.

AIST 204 (s) Special Topics
Credit arranged.

AIST 210 Native Identities
3 credits
This course is intended to develop a dynamic modern understanding of indigenous communities and self. The class will focus on such themes as family, history, blood & kinship, colonization, treaty rights and sovereignty, land and linguistics.

AIST 298 Tribal Natural Resource Internship
1-4 credits
This course is a supervised internship in an Indian community setting that provides work experience and learning opportunities in natural resource ecology and management. The course requires the development of a formal plan of activities and learning goals that must be approved by the onsite supervisor and faculty instructor.

AIST 314 Tribal Sovereignty and Federal Policy
3 credits
Cross-listed with ANTH 314, SOC 317
The Tribal Sovereignty and Federal Policy course is designed to provide an in-depth understanding of how colonial and Federal Indian Policies have impacted the lives of Tribes and their surrounding communities. Through a survey of the changing eras of policy (conquest, pre-Revolutionary approaches, the Marshall Trilogy, the Treaty Era, Allotment and Termination, and Self-Determination), students will learn about the forces that have shaped tribal communities, and a deeper appreciation for tribes' efforts to restore and exercise their sovereignty. Tribal Sovereignty as it applies to land management, natural resources and community development will be a focal area.

AIST 316 American Indian History
3 credits
Cross-listed with HIST 316
Course investigates Indigenous people in North America from time immemorial to present. Emphasizes Native American resilience and adaptability in the face of colonialism.

AIST 320 Native American & Indigenous Film
3 credits
Gen Ed: American Diversity
Examines the representation of American Indians in film from early-mid 20th century Hollywood westerns to self representations of late 20th and early 21st century films made by Native Americans. Traces changes in the cinematic depictions of Native peoples and historical and cultural reasons for those changes. Emphasizes Native-made film as extension of oral tradition, indigenous aesthetics, and sovereignty. May include international Indigenous films.

AIST 321 (s) Tribal Elders Series
3 credits, max 9
Cross-listed with ANTH 321, SOC 319
This course is intended to share information from the neighboring tribes surrounding the University of Idaho. Elders from these communities will share a tribal epistemology that each tribe considers to be essential to an education of an adult. Such educational perspective may often be missing/misrepresented or misunderstood in current university pedagogy. This class will place an emphasis on contemporary indigenous voices. This course will have a subtopic heading to incorporate the possibility of having many neighboring tribes participate.

AIST 344 Indigenous Ways of Knowing
3 credits
The course is intended as an introduction to issues of cultural, racial, ethnic and linguistic diversity that arise in American school and society. In particular we will be looking at indigenous epistemological comparison with Western educational models. The central question for the course will be: Why is educational attainment different for different groups in society, and how does that difference relate to social stratification characteristics of the larger society? We will also try to answer other questions: What is the impact of cultural and linguistic diversity on the various institutions of society, including family, schools, and the economic system? What policies and programs have been developed in the US and other societies to deal with cultural diversities? These and other questions will be the basis for our reading and discussions.

AIST 400 (s) Seminar
Credit arranged.

AIST 401 Contemporary American Indian Issues
3 credits
Gen Ed: American Diversity
Identifies and addresses key cultural, economic, educational, legal, resource, and sovereignty issues facing Indian communities today; an essential component involves presentations by representatives from the Indian communities. (Spring only)

AIST 403 (s) Workshop
Credit arranged.

AIST 404 (s) Special Topics
Credit arranged.

AIST 411 Native American Architecture
3 credits
Gen Ed: American Diversity
Cross-listed with ARCH 411
An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

AIST 412 Tribal Governance
3 credits
This course is intended to impart an understanding of the vitality and rich diversity of contemporary American Indian societies, their histories, and their literatures, e.g., in the arts and expressive culture, governmental affairs both indigenous and external, economics, ecological relations and natural resources, health care, and family, social and religious life, oral traditions, world views and cultural values. This understanding is inclusive of both indigenous cultural and contact-historical expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome.
Prereq: AIST 210 .

AIST 420 Native American Law
3 credits
Cross-listed with LAW 949
Study of Tribal Sovereignty and interaction with the U.S. government at various levels with an emphasis on treaty rights, jurisdictional issues, the trust relationship, protection of lands, the eras of U.S. Indian policy, and the continued assertion of tribal rights and interests. LAW 949 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 420 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course.

AIST 421 Native American Natural Resource Law
3 credits
Cross-listed with LAW 979
Study of the natural resources over which Tribal Nations assert stewardship or seek to influence others regarding protection of resources including sacred sites, land use and environmental protection, natural resource development, taxation, water rights, rights associated with hunting, fishing and gathering, and international approaches to indigenous lands and resources. Recommended Preparation: LAW 949. LAW 979 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 421 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course.

AIST 422 Plateau Indians
3 credits
Gen Ed: American Diversity
Cross-listed with ANTH 422 and RELS 422
An overview of historic and contemporary Indian cultures of the Plateau; oral traditions, ceremonial life, social organization, and subsistence activities; history of contact with Euro-American society. Two 1 to 2-day field trips reqd. Additional projects/assignments reqd for grad cr. ANTH 422 is a cooperative course available to WSU degree-seeking students.

AIST 478 Tribal Nation Economics and Law
3 credits
Cross-listed with LAW 928
Survey of economic development strategies by various Tribal Nations, including an overview of federal incentive programs and disincentives for the growth of strong tribal economies. Tribal legal codes, commercial projects, and federal Indian law parameters will be discussed. Topics will include: the tribal government-owned corporate model, gaming enterprises, economic diversification, the federal 8(a) program, limitations on tribal tax-exempt bond offerings, and value-added on-reservation products. LAW 928 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 478 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course. (Spring, alt/yrs)

AIST 484 American Indian Literature
3 credits
Gen Ed: American Diversity
Cross-listed with ENGL 484
Major themes and traditions in American Indian texts.
Prereq: ENGL 102
Prereq or Coreq: ENGL 175 or ENGL 257 or ENGL 258 .

AIST 498 (s) Internship
Credit arranged
Supervised internship in an Indian community setting, integrating academic study with work experience; requires formal plan of activities to be approved by the on site supervisor and assigned faculty member; a final written report will be evaluated by the assigned faculty member.
Prereq: Permission.

AIST 499 (s) Directed Study
Credit arranged.

AMERICAN STUDIES (AMST)

AMST 200 (s) Seminar
Credit arranged.

AMST 203 (s) Workshop
Credit arranged.

AMST 204 (s) Special Topics
Credit arranged.

AMST 299 (s) Directed Study
Credit arranged.

AMST 301 Studies in American Culture
3 credits
Gen Ed: Humanities, American Diversity
In-depth exploration of a significant theme or issue in American society from a variety of disciplinary perspectives; specific focus may vary, but includes consistent incorporation of a historical dimension, attention to inequalities and diversity, and analysis of aspects of contemporary American culture including a global context.
Prereq: ENGL 102; Junior standing or Permission.

AMST 400 (s) Seminar
Credit arranged.

AMST 403 (s) Workshop
Credit arranged.

AMST 404 (s) Special Topics
Credit arranged.

AMST 499 (s) Directed Study
Credit arranged.

ANIMAL AND VETERINARY SCIENCE (AVS)

AVS 105 Survey of the Science of Livestock Production and Management
1-3 credits, max 3
This course is designed to introduce the student to the principles of animal production and management through knowledge and skills pertaining to nutrition, reproduction, diseases, breeding, genetics, anatomy, and physiology in livestock. Course will be offered for 1 credit in the Fall and 2 in the Spring.

AVS 109 The Science of Animals that Serve Humanity
4 credits
Role of animal agriculture in providing food, work, and pleasure for mankind; intro to animal genetics, physiology, endocrinology, nutrition, and other disciplines essential for an understanding of the contributions of animals in the expanding human population.

AVS 110 Science of Animal Husbandry
3 credits
Fundamental concepts of animal husbandry and its foundation in the science of animal production; introduction to the technical subject matter of animal production.
Prereq: AVS 109.

AVS 110L Science of Animal Husbandry Lab
1 credit
Laboratory to support teaching in AVS 110; introductory applications of fundamentals of animal science to domestic animal management and production. One 2-hr lab a week.
Prereq: AVS 109
Coreq: AVS 110 .

AVS 172 Principles and Practices of Dairy Science
2 credits
An overview of the dairy industry and the science of producing milk and reproduction, udder health and mastitis, milk marketing, and dairy product quality and safety; approved management practices for dairy enterprise.

AVS 204 (s) Special Topics
Credit arranged.

AVS 222 Animal Reproduction and Breeding
3 credits
Provides fundamental information about reproduction, lactation, and breeding of domestic animals; topics include functional anatomy, basic physiology, and endocrinology relating to reproduction and lactation; animal breeding involves the mathematical and conceptual framework of genetic evaluation.

AVS 263 Live Animal and Carcass Evaluation
3 credits
Evaluation and selection of cattle, sheep, and swine for herd replacement; evaluation of market animals; carcass evaluation and grading, slaughter procedures, and factors that affect quality and quantity of meat; visual and objective appraisals. One lecture and two 3-hour lab a week; four 1-day and four 1/2-day field trips or equivalent time. Cooperative: open to WSU degree-seeking students.

AVS 268 Companion Animal Diseases
2 credits
Principles of disease resistance, transmission, and prevention; clinical signs, pathogenesis, and control of major diseases in companion animals. Recommended preparation: AVS 222 or equivalent.
Prereq: AVS 109 .

AVS 274 Beef Feedlot Systems
2 credits
Overview of feeding management, feed milling and batching, animal health, and economics of the commercial cattle feeding business.
Prereq: AVS 109
Coreq: AVS 110 .

AVS 298 (s) Internship
Credit arranged.

AVS 299 (s) Directed Study
1-6 credits, max 6
Graded P/F.
Prereq: Permission of department.

AVS 305 Animal Nutrition
4 credits
Introduction of the concepts and principles of animal nutrition; fundamentals of nutrients and their digestion and metabolism; various biochemical pathways and processes for nutrient utilization; nutrition fundamentals for a range of monogastric and ruminant animals. Recommended Preparation: BIOL 115, BIOL 115L and CHEM 111, CHEM 111L. Cooperative: open to WSU degree-seeking students.
Prereq: AVS 109.

AVS 306 Feeds and Ration Formulation
4 credits
Application of principles of nutrition to ration formulation for poultry and livestock; evaluating feedstuffs for use in ration formulation. Three lec and one 2-hr lab a wk. Recommended Preparation: AVS 305. Cooperative: open to WSU degree-seeking students.

AVS 317 Artificial Insemination and Pregnancy Detection
3 credits
Anatomy and physiology of pregnant and non-pregnant reproductive systems; artificial insemination; male reproduction; pregnancy detection in domestic livestock.
Prereq: AVS 109; and AVS 222 or AVS 452, Junior/Senior Standing OR instructor permission.

AVS 318 Beef Calving Management
1 credit
Increase student's knowledge and experience of the biology, physiology and management of cows and calves before, during and after the birthing process.
Prereq: AVS 109 and AVS 110 .

AVS 330 Genetics of Livestock Improvement
3 credits
Genetic principles applied to breeding of farm animals. This is a cooperative course available to WSU degree-seeking students.
Prereq: AVS 109.

AVS 363 Animal Products for Human Consumption
4 credits
Cross-listed with FS 363
The meat, dairy, and egg industries, including product produced, processed, safety (HACCP), nutrition, distribution, quality, quantity, palatability, health, cooking, home storage, and consumer concerns. Special clothing and equipment required. Three lecture credits and one 3-hour lab per week. Recommended Preparation: BIOL 115, BIOL 115L. Cooperative: open to WSU degree-seeking students.

AVS 371 Anatomy and Physiology
3 credits
Structure and function of tissues and organ systems of domestic and wild animals.
Prereq: BIOL 115, BIOL 115L.

AVS 373 Anatomy and Physiology Lab
1 credit
Students will perform dissections and examine the relationship between the organization of tissues and their distinct function within the animal. Field trips may be incorporated should teaching opportunities arise though most instruction will be confined to the Physiology and Anatomy laboratory and classroom. (Fall only)
Prereq: AVS 109, BIOL 115, BIOL 115L and Animal and Veterinary Science major
Coreq: AVS 371.

AVS 398 (s) Internship
Credit arranged
Cooperative programs with producers, allied industry and food processing industries within the state. Graded P/F.
Prereq: Permission.

AVS 404 (s) Special Topics
Credit arranged.

AVS 405 (s) Professional Development
Credit arranged.

AVS 411 Ruminant Nutrition
3 credits
Joint-listed with AVS 511
Intro to anatomy of digestive tract of ruminant; focus on ruminal and postruminal carbohydrate, protein, and lipid metabolism; ruminal bacteria, protozoa and fungi, microbe-microbe interactions and their role in nutrients utilization; compartmentation of the rumen and microbial protein synthesis; practical aspects of ruminant nutrition and intro to current feeding systems; research techniques in studying ruminal degradation and digesta kinetics. Additional projects/assignments required for grad cr. (Alt/yrs)
Prereq: Permission.

AVS 450 Issues in Animal Agriculture
2 credits
Gen Ed: Senior Experience
The capstone experience for seniors in AVS; students will present information on selected topics and propose solution to current problems; emphasis on problem solving using integration of information across disciplines.
Prereq: Senior standing.

AVS 452 Physiology of Reproduction
4 credits
Physiology of reproduction; growth, structure, development, endocrinology, and control of reproductive function with emphasis on farm animals. Three lecture and one 2-hour lab a week. Cooperative: open to WSU degree-seeking students.
Prereq: AVS 109 and BIOL 115 and BIOL 115L or equivalent.

AVS 463 Growth and Lactation
3 credits
Joint-listed with AVS 563
Principles of animal growth and lactation. Hormonal, nutritional, and metabolic control of bone, muscle, adipose, and mammary tissue development; regulation of lactation.
Prereq: AVS 109 and BIOL 115, BIOL 115L
Coreq: AVS 305 .

AVS 466 Equine Science and Management
3 credits
Study of the industry as well as basic principles of equine science and management, including conformation and selection, anatomy, form to function, nutrition and feeding, behavior, health, reproduction, marketing, facilities and business management. Two lecture, and one 2-hour lab a week. Cooperative: open to WSU degree-seeking students.
Prereq: Junior standing and AVS 222, AVS 371 and AVS 305 or Permission .

AVS 471 Animal Disease Management
3 credits
Principles of immunity and disease resistance, transmission, and prevention; clinical signs, pathogenesis, and control of major diseases of economic importance in domestic animals.
Prereq: Junior standing.

AVS 472 Dairy Cattle Management
3 credits
Establishing a dairy farm, housing and managing large dairy herds, selection of breeding cattle, and marketing quality milk. One 4-day field trip. Recommended Preparation: AVS 222 or equivalent. Cooperative: open to WSU degree-seeking students.
Prereq: AVS 109
Coreq: AVS 305 .

AVS 474 Beef Cattle Science
3 credits
Breeding, feeding, and management; commercial and purebred enterprises; management of beef cattle on ranges, pasture, and in the feedlot. One 1-day field trip. Recommended Preparation: AVS 222 or equivalent. Cooperative: open to WSU degree-seeking students.
Prereq: AVS 109
Coreq: AVS 305.

AVS 475 Advanced Dairy Management
3 credits
Application of concepts of dairy cattle management to practical situations. One lecture and 1-2 hours of lab a week. Recommended Preparation: AVS 472. Cooperative: open to WSU degree-seeking students.
Prereq: AVS 305
Coreq: AVS 306 or AVS 411 .

AVS 476 Sheep Science
3 credits
Application of principles of genetics, reproduction, nutrition, health, and marketing to the management of commercial and purebred sheep; new developments related to sheep industry; production, evaluation, and use of wool. Two lectures and one 2-hour lab a week; one 1-day field trip or equiv time. Recommended Preparation: AVS 222 or equivalent.
Prereq: AVS 109.

AVS 498 (s) Internship
Credit arranged.

AVS 499 (s) Directed Study
1-6 credits, max arranged.

AVS 500 Master's Research and Thesis
Credit arranged.

AVS 501 (s) Seminar
Credit arranged .

AVS 502 (s) Directed Study
Credit arranged
Graded P/F.
Prereq: Permission.

AVS 503 (s) Workshop
Credit arranged.

AVS 504 (s) Special Topics
Credit arranged.

AVS 505 (s) Professional Development
Credit arranged.

AVS 509 Growth Physiology Inquisition
2 credits, max arranged
This course will develop skills in critical review of literature in Growth Physiology. Students will study set journal articles describing original research and present their review to the study group in a team participation format. Active participation of the study group, led by the primary reviewer is an essential component of the course. Graduate students are encouraged to take the course multiple times (e.g., each semester). Student performance is evaluated using a six criterion Rubric. For undergraduate credit, students are evaluated across 2-3 achievement levels per criterion. For graduate credit, students are evaluated across 4 achievement levels per criterion as shown in the Course Outline.

AVS 511 Ruminant Nutrition
3 credits
Joint-listed with AVS 411
Intro to anatomy of digestive tract of ruminant; focus on ruminal and postruminal carbohydrate, protein, and lipid metabolism; ruminal bacteria, protozoa and fungi, microbe-microbe interactions and their role in nutrients utilization; compartmentation of the rumen and microbial protein synthesis; practical aspects of ruminant nutrition and intro to current feeding systems; research techniques in studying ruminal degradation and digesta kinetics. Additional projects/assignments required for grad cr. (Alt/yrs)
Prereq: Permission.

AVS 517 Macronutrient Metabolism
3 credits
Upon completion of this class students will be familiarized with many aspects of digestion, absorption and metabolism of macronutrients in a detailed level. The emphasis will be on interrelationship and regulation of macronutrients utilization at cellular and organ levels. It is assumed that graduate students have a good knowledge of physiology and biochemistry. Pertinent research manuscripts will be discussed in a round-table fashion.
Prereq: AVS 305, or AVS 411, or similar course .

AVS 531 Practical Methods in Analyzying Animal Science Experiments
3 credits
Upon completion of this class students will be able to manage and analyze data obtained from animal experimentations. This is a "hands-on" type of training, specifically designed for AVS graduate students and intends to provide our graduate students with a better understanding of designs commonly used in animal science experiments, advantages and potential pitfalls associated with each design, data processing and analysis, data tabulation, and graphic illustration, and data interpretation.
Prereq: 400 level statistics course .

AVS 563 Growth and Lactation
3 credits
Joint-listed with AVS 463
Principles of animal growth and lactation. Hormonal, nutritional, and metabolic control of bone, muscle, adipose, and mammary tissue development; regulation of lactation.
Prereq: AVS 109 and BIOL 115, BIOL 115L
Coreq: AVS 305 .

AVS 567 Advanced Physiology
4 credits
An advanced review of physiology designed to emphasize the interaction between structure and function of specialized cells, tissues, organs and systems. The systems to be covered will include but are not limited to, the mammalian cell, hematology neurophysiology, muscle physiology, cardiovascular physiology, pulmonary physiology, renal physiology and whole animal metabolism. Recommended preparation: undergraduate physiology, biology, cell biology, and/or biochemistry. (Spring, alt/odd yrs)

AVS 597 (s) Practicum
Credit arranged.

AVS 598 (s) Internship
Credit arranged.

AVS 599 (s) Non-thesis Master's Research
Credit arranged.

AVS 600 Doctoral Research and Dissertation
Credit arranged.

ANTHROPOLOGY (ANTH)

ANTH 100 Introduction to Anthropology
3 credits
Gen Ed: Social Science
Basic theories, methods, and findings of human paleontology, prehistory, and culture.

ANTH 101 Biological Anthropology
3 credits
Gen Ed: Social Science
Evidence for primate and human evolution; processes of racial diversification; techniques of biological anthropology; human population biology.

ANTH 102 Cultural Anthropology
3 credits
Gen Ed: Social Science, International
Explores the global diversity of cultures and the variety of ways humans organize and understand their world .

ANTH 103 Introduction to Archaeology
3 credits
Archaeological techniques for interpreting past lifeways from material remains; includes both prehistoric and historical archaeology.

ANTH 200 (s) Seminar
Credit arranged.

ANTH 201 Introduction to Inequalities & Inclusion
3 credits
Gen Ed: Social Science, American Diversity
Cross-listed with SOC 201
An interdisciplinary and historical study of social inequities and inclusion in a cross-cultural global context. The course examines multiple forms of diversity and stratification including, but not limited to, culture, class, race/ethnic, gender/sexuality, religious diversity, and political ideology in an effort to raise students' ability to interact with and understand others in our increasingly multicultural world. Courses may vary in their emphasis on United States' or international experiences. May include service learning.
Prereq: SOC 101.

ANTH 203 (s) Workshop
Credit arranged.

ANTH 204 (s) Special Topics
Credit arranged.

ANTH 230 World Prehistory
3 credits
Prehistoric cultures of Old and New Worlds; techniques of excavation; methods of archaeological analysis.

ANTH 241 Introduction to the Study of Language
3 credits
Cross-listed with ENGL 241.
Surveys of sound patterns, morphological processes and syntactic structures; questions of language acquisition, variation, and history; exercises from a variety of languages, with emphasis on American English.

ANTH 261 Language and Culture
3 credits
Gen Ed: Social Science, International
Language as an aspect of culture; the relation of habitual thought and behavior to language.

ANTH 299 (s) Directed Study
Credit arranged.

ANTH 314 Tribal Sovereignty and Federal Policy
3 credits
Cross-listed with AIST 314, SOC 317
The Tribal Sovereignty and Federal Policy course is designed to provide an in-depth understanding of how colonial and Federal Indian Policies have impacted the lives of Tribes and their surrounding communities. Through a survey of the changing eras of policy (conquest, pre-Revolutionary approaches, the Marshall Trilogy, the Treaty Era, Allotment and Termination, and Self-Determination), students will learn about the forces that have shaped tribal communities, and a deeper appreciation for tribes' efforts to restore and exercise their sovereignty. Tribal Sovereignty as it applies to land management, natural resources and community development will be a focal area.

ANTH 321 (s) Tribal Elders Series
3 credits, max 9
Cross-listed with AIST 321, SOC 319
This course is intended to share information from the neighboring tribes surrounding the University of Idaho. Elders from these communities will share a tribal epistemology that each tribe considers to be essential to an education of an adult. Such educational perspective may often be missing/misrepresented or misunderstood in current university pedagogy. This class will place an emphasis on contemporary indigenous voices. This course will have a subtopic heading to incorporate the possibility of having many neighboring tribes participate.

ANTH 327 Belief Systems
3 credits
Cross-listed with RELS 327
Method and theory of comparative anthropological study of religion.

ANTH 329 North American Indians
3 credits
Gen Ed: Social Science, American Diversity
Origins, physical types, languages, and cultures of North American Indians.

ANTH 350 Food, Culture, and Society
3 credits
Gen Ed: Social Science, American Diversity
Cross-listed with SOC 350
Examines the structural and cultural implications of eating and producing food in a global world. Utilizing a social scientific framework, it explores the history of particular foods and examines how food systems are racialized, classed and gendered. Primary foci include the social history of food holidays and taboos, the relationships between food and identity, the impact of agricultural production practices on food systems and food security, and forms of resistance to these impacts. Recommended Preparation: ANTH 220 or a 200-level sociology course. May include field trips.
Prereq: SOC 101.

ANTH 400 (s) Seminar
Credit arranged.

ANTH 403 (s) Workshop
Credit arranged .

ANTH 404 (s) Special Topics
Credit arranged.

ANTH 409 Anthropological Field Methods
1-8 credits, max 8
Field training in archaeology and/or social anthropology.

ANTH 411 Human Evolution
3 credits
Joint-listed with ANTH 511
Human origins in light of the fossil record and evolutionary theory. Additional projects/assignments reqd for grad cr. Recommended Preparation: ANTH 100. Cooperative: open to WSU degree-seeking students.

ANTH 412 Human Races
3 credits
Joint-listed with ANTH 512
Human population biology, dynamics of evolution, human ecology, and their relationship to problem of human racial variation. Additional projects/assignments reqd for grad cr. Recommended Preparation: ANTH 100.

ANTH 416 Qualitative Social Science Methods
3 credits
Gen Ed: Senior Experience
Joint-listed with ANTH 516, Cross-listed with SOC 416
This course introduces students to social science research methods that collect qualitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit.
Prereq: SOC 101.

ANTH 417 Social Data Analysis
3 credits
Joint-listed with ANTH 517, Cross-listed with SOC 417
This course introduces students to social science research methods that collect quantitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit.
Prereq: STAT 251 and SOC 101.

ANTH 418 Anthropology of Tourism
3 credits
Joint-listed with ANTH 518
Across the globe, tourism has been touted as a route to economic sustainability and both national and local prosperity. As one of the largest and fastest growing industries in the modern world, tourism can supply wealth and growth opportunities to poverty stricken communities - but at what cost? In this course, we will examine both the advantages and disadvantages to a variety of forms of tourism: sex tourism, "primitive" tourism, heritage tourism, ecotourism, and nature tourism, to name a few. Additional work required for graduate credit.

ANTH 420 Anthropological History and Theory
3 credits, max 9
Historical development of anthropology along with theoretical debates as presented in the anthropological literature.
Prereq: Upper-Division standing.

ANTH 422 Plateau Indians
3 credits
Gen Ed: American Diversity
Cross-listed with AIST 422 and RELS 422
An overview of historic and contemporary Indian cultures of the Plateau; oral traditions, ceremonial life, social organization, and subsistence activities; history of contact with Euro-American society. Two 1 to 2-day field trips reqd. Additional projects/assignments reqd for grad cr. Cooperative: open to WSU degree-seeking students.

ANTH 427 Racial and Ethnic Relations
3 credits
Gen Ed: Social Science, American Diversity
Cross-listed with SOC 427
Examination of the social construction of racial categories and meanings; theories of race relations; historical and contemporary experiences of racial/ethnic groups in the U.S.; contemporary issues and debates.
Prereq: SOC 101 and a 3 cr lower-division SOC course, or SOC 301/ANTH 301.

ANTH 428 Social and Political Organization
3 credits
Joint-listed with ANTH 528
Bases of social and political organization; kin based units; non-kin units; political units through primitive states. Additional projects/assignments reqd for grad cr.
Prereq: Upper-Division standing.

ANTH 430 Introduction to Archaeological Method and Theory
3 credits
Joint-listed with ANTH 530
Archaeological theory in anthropological perspective; current trends in method and theory of American archaeology. Additional projects/assignments reqd for grad cr.
Prereq: ANTH 231 or Permission.

ANTH 431 Historical Archaeology
3 credits
Joint-listed with ANTH 531
Investigation of the techniques of historical archaeology as well as an introduction to historic material culture and the theories that inform historical archaeology research. Additional projects/assignments reqd for grad cr. ANTH 531 is a cooperative course available to WSU degree-seeking students.
Prereq: ANTH 100.

ANTH 432 Historical Artifact Analysis
3 credits
Joint-listed with ANTH 532
An overview and detailed study of the major classes of material culture commonly recovered on historical sites. Course emphasizes the identification of historical materials and introduction of a variety of analytical tools used in historical archaeology.
Prereq: ANTH 230 or ANTH 431 or Permission.

ANTH 433 Applied Cultural Resource Management
3 credits
Joint-listed with ANTH 533
Introduction to the practice of archaeology in the field of Cultural Resource Management. This course emphasizes and exposes students to skills needed in today's world of CRM. Additional projects/assignments reqd for grad cr.

ANTH 436 North American Prehistory
3 credits
Joint-listed with ANTH 536
Theories, methods, and findings of prehistoric North American archaeology. Additional projects/assignments reqd for grad cr.
Prereq: ANTH 231.

ANTH 443 Plateau Prehistory
3 credits
Joint-listed with ANTH 543
Prehistoric cultures, chronologies, and interrelationships within the interior Northwest. Additional projects/assignments reqd for grad cr.
Prereq: ANTH 231 or Permission.

ANTH 449 Lithic Technology
3 credits
Joint-listed with ANTH 549
Manufacture and analysis of stone implements, theory of rock fracture, nonhuman productions of pseudo-artifacts. Additional projects/assignments reqd for grad cr.
Prereq: ANTH 231 or Permission.

ANTH 451 Forensic Anthropology
3 credits
Joint-listed with ANTH 551
Observations and measurements of the human skeleton; variations based on age, sex, and race, and pathologies; identification of human skeletal material and other mammals. Additional projects/assignments reqd for grad cr. Three lec/lab sessions a wk. Recommended Preparation: ANTH 251.

ANTH 453 Archaeological Lab Techniques
3 credits
This class is designed to offer students a complete range of archaeological laboratory techniques from analysis to final curation. All students will be involved in either curating a small archaeological collection, or processing artifacts for analytical purposes using basic laboratory skills. In addition, students will be expected to become knowledgeable about contemporary and/or ethical issues in conservation, e.g., whether or not to clean lithics and metal, deaccessioning collections, and NAGPRA, among other issues. Lastly, students will be encouraged to determine their role within the archaeological/anthropological community and develop a long term plan for how they will impact their respective fields in the future. Two lectures and 1 hour of lab a week. Recommended Preparation: ANTH 231, ANTH 431, ANTH 432 and ANTH 449. (Alt/yrs)

ANTH 462 Human Issues in International Development
3 credits
Gen Ed: Social Science, International
Joint-listed with ANTH 562, Cross-listed with LAS 462
Course content includes the historical and political contexts that shape development, development theories and approaches, along with the global challenges of poverty, social inequalities, and environment. Culture as an important consideration in development is emphasized. Additional projects/assignments reqd for grad cr. (Alt/yrs)

ANTH 465 Environment, Policy, and Justice
3 credits
Joint-listed with ANTH 565, Cross-listed with SOC 465
The "environment" in modern times has been treated as something separate from human communities, yet our experiences and common understandings of progress and prosperity are integrally tied to our daily interactions with the environment. Environmental and human disasters in recent years have further reminded us of the importance of seeing our dependence on environmental health. This course surveys different perspectives surrounding environmental issues and society's connection to them. Courses will slightly differ in emphasis depending on the instructor, allowing opportunities to explore more deeply how social philosophies, policies, and criminological dimensions can be linked to studying environment. Additional work required for graduate credit.

ANTH 496 (s) Practicum in Tutoring
1 credit, max 2
Tutorial services performed by advanced students under faculty supervision. Graded P/F.
Prereq: Permission.

ANTH 498 (s) Internship
Credit arranged.

ANTH 499 (s) Directed Study
Credit arranged.

ANTH 500 Master's Research and Thesis
Credit arranged.

ANTH 501 (s) Seminar
Credit arranged.

ANTH 502 (s) Directed Study
Credit arranged.

ANTH 503 (s) Workshop
Credit arranged.

ANTH 504 (s) Special Topics
Credit arranged.

ANTH 505 (s) Professional Development
Credit arranged.

ANTH 509 Anthropological Field Methods
1-8 credits, max 8
Individual field work in approved areas.
Prereq: Permission.

ANTH 511 Human Evolution
3 credits
Joint-listed with ANTH 411
Human origins in light of the fossil record and evolutionary theory. Additional projects/assignments reqd for grad cr. Recommended Preparation: ANTH 100. Cooperative: open to WSU degree-seeking students.

ANTH 512 Human Races
3 credits
Joint-listed with ANTH 412
Human population biology, dynamics of evolution, human ecology, and their relationship to problem of human racial variation. Additional projects/assignments reqd for grad cr. Recommended Preparation: ANTH 100.

ANTH 516 Qualitative Social Science Methods
3 credits
Joint-listed with ANTH 416
This course introduces students to social science research methods that collect qualitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit.
Prereq: SOC 101.

ANTH 517 Social Data Analysis
3 credits
Joint-listed with ANTH 417
This course introduces students to social science research methods that collect quantitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit.
Prereq: STAT 251 and SOC 101 .

ANTH 518 Anthropology of Tourism
3 credits
Joint-listed with ANTH 418
Across the globe, tourism has been touted as a route to economic sustainability and both national and local prosperity. As one of the largest and fastest growing industries in the modern world, tourism can supply wealth and growth opportunities to poverty stricken communities - but at what cost? In this course, we will examine both the advantages and disadvantages to a variety of forms of tourism: sex tourism, "primitive" tourism, heritage tourism, ecotourism, and nature tourism, to name a few. Additional work required for graduate credit.

ANTH 521 Contemporary Issues in Anthropological Theory
3 credits
In-depth exploration of contemporary theoretical issues within anthropology.
Prereq: ANTH 420 or equiv, or Permission.

ANTH 522 Plateau Indians
3 credits
Joint-listed with ANTH 422.

ANTH 528 Social and Political Organization
3 credits
Joint-listed with ANTH 428
Examination of the social construction of racial categories and meanings; theories of race relations; historical and contemporary experiences of racial/ethnic groups in the U.S.; contemporary issues and debates.
Prereq: SOC 101 and a 3 cr lower-division SOC course, or SOC 301/ANTH 301.

ANTH 530 Introduction to Archaeological Method and Theory
3 credits
Joint-listed with ANTH 430
Archaeological theory in anthropological perspective; current trends in method and theory of American archaeology. Additional projects/assignments reqd for grad cr.
Prereq: ANTH 231 or Permission.

ANTH 531 Historical Archaeology
3 credits
Joint-listed with ANTH 431
Investigation of the techniques of historical archaeology as well as an introduction to historic material culture and the theories that inform historical archaeology research. Additional projects/assignments reqd for grad cr. Cooperative: WSU degree-seeking students.
Prereq: ANTH 100.

ANTH 532 Historical Artifact Analysis
3 credits
Joint-listed with ANTH 432
An overview and detailed study of the major classes of material culture commonly recovered on historical sites. Course emphasizes the identification of historical materials and introduction of a variety of analytical tools used in historical archaeology.
Prereq: ANTH 230 or ANTH 431 or Permission.

ANTH 533 Applied Cultural Resource Management
3 credits
Joint-listed with ANTH 433
Introduction to the practice of archaeology in the field of Cultural Resource Management. This course emphasizes and exposes students to skills needed in today's world of CRM. Additional projects/assignments reqd for grad cr.

ANTH 536 North American Prehistory
3 credits
Joint-listed with ANTH 436
Theories, methods, and findings of prehistoric North American archaeology. Additional projects/assignments reqd for grad cr.
Prereq: ANTH 231.

ANTH 543 Plateau Prehistory
3 credits
Joint-listed ANTH 443.

ANTH 549 Lithic Technology
3 credits
Joint-listed with ANTH 449
Manufacture and analysis of stone implements, theory of rock fracture, nonhuman productions of pseudo-artifacts. Additional projects/assignments reqd for grad cr.
Prereq: ANTH 231 or Permission.

ANTH 551 Forensic Anthropology
3 credits
Joint-listed with ANTH 451
Observations and measurements of the human skeleton; variations based on age, sex, and race, and pathologies; identification of human skeletal material and other mammals. Additional projects/assignments reqd for grad cr. Three lec/lab sessions a wk. Recommended Preparation: ANTH 251.

ANTH 562 Human Issues in International Development
3 credits
Joint-listed with ANTH 462
Course content includes the historical and political contexts that shape development, development theories and approaches, along with the global challenges of poverty, social inequalities, and environment. Culture as an important consideration in development is emphasized. Additional projects/assignments reqd for grad cr. (Alt/yrs)

ANTH 565 Environment, Policy, and Justice
3 credits
Joint-listed with ANTH 465
The "environment" in modern times has been treated as something separate from human communities, yet our experiences and common understandings of progress and prosperity are integrally tied to our daily interactions with the environment. Environmental and human disasters in recent years have further reminded us of the importance of seeing our dependence on environmental health. This course surveys different perspectives surrounding environmental issues and society's connection to them. Courses will slightly differ in emphasis depending on the instructor, allowing opportunities to explore more deeply how social philosophies, policies, and criminological dimensions can be linked to studying environment. Additional work required for graduate credit.

ANTH 598 (s) Internship
Credit arranged.

ANTH 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ARCHITECTURE (ARCH)

ARCH 151 Introduction to the Built Environment
3 credits
Gen Ed: Humanities
May not be taken for credit after LARC 151. Introduction to the complexities and wonders of the built environment, and the role of the humanities in successful designs. From the regional landscapes to urban design and architecture, to the intimacy of interiors and dwellings, to place making and space making, student perspectives are broadened on how the built environment is shaped by and contributes to an evolving human story. The built environment is also examined as a product of a multitude of forces that include: place, climate, conservation, culture, economics, beliefs, and aspirations for well-being.

ARCH 154 Introduction to Architectural Graphics
3 credits
Introduction to architectural graphics; two 1-hour lecture sessions per week, plus two 1-hour studio sessions per week; weekly assigned drawing projects, readings, and sketchbook projects; periodic quizzes. Cooperative: open to WSU degree-seeking students.

ARCH 200 (s) Seminar
Credit arranged.

ARCH 203 (s) Workshop
Credit arranged.

ARCH 204 (s) Special Topics
Credit arranged.

ARCH 217 Ancient & Pre-Modern Art
3 credits
A survey of ancient to early modern art, covering the period from classical antiquity through neoclassicism and the industrial revolution. Particular care will be taken to situate the art, architecture, and design of each period in its cultural, political, and religious contexts. Basic methods and approaches of art history will be also be covered. Classes will be mostly lectures, with discussion of primary sources. No prior experience with art or history is required.

ARCH 243 Media in Architecture
3 credits
Introduction to techniques for hybridizing manual & digital design tools for workflows relative to the architectural design process; includes virtual modeling, CNC fabrication, 2D/3D printing, manual drafting, manual modeling, various software. Two 75 minute sessions per week; in class lectures & workshops; tools, techniques, & exercises integrated with ARCH 253
Coreq: ARCH 254.

ARCH 244 Computer Aided Drafting and Modeling
2 credits
Cross-listed with ID 244
Introduction to computer-aided drafting and modeling techniques and applications.
Prereq: ARCH 154 .

ARCH 253 Architectural Design I
4 credits
Introduction to Architectural Design Fundamentals including formal principles, ordering systems, conceptualization, experimentation, design making, & design communication for the resolution of given architectural design problems. Two 3-hr studio sessions per wk; course includes lectures, workshops, project development, presentations, readings.

ARCH 254 Architectural Design II
4 credits
Cross-listed with ID 254.
Basic integration of principles and concepts for architectural design, both interior & exterior. Two 3-hr studios a wk and assigned work.
Prereq: ARCH 253 or Permission
Coreq: ARCH 243.

ARCH 257 Architectural Design Bootcamp
10 credits
Intensive introduction to various design processes from concept to schematic to design development. Acquisition of a beginning level of both graphic and architectural design literacy, design thinking strategies, aesthetic awareness. Development of basic design communication skills and introduction and application of construction technologies through component resolution.
Prereq: Architecture Permission .

ARCH 266 Materials and Methods
3 credits
Introduce physical and performance characteristics of materials, and concepts, conventions and processes of construction methods. Provide a foundation for subsequent courses in architectural technology and design.

ARCH 299 (s) Directed Study
Credit arranged.

ARCH 353 Architectural Design III
6 credits
Development of architectural design process and projects that cultivate an understanding of structures, properties of materials and building tectonics. Emphasis is also placed on precedent analysis, basic code and site related issues. Three 3-hr studios a wk and assigned work; field trips reqd at student expense outside scheduled hours; some class critique sessions may meet outside of scheduled hours.
Prereq: ARCH 254 or equivalent. Application Required.

ARCH 354 Architectural Design IV
6 credits
Continued development of architectural projects and design process that cultivate understanding of the properties of materials and building tectonics. Three 3-hr studios a wk and assigned work; field trips will be reqd at student expense outside scheduled hours; some class critique sessions will meet outside of scheduled hours.
Prereq: ARCH 353 .

ARCH 361 Structural Systems I
3 credits
Project based introduction to the physical principles that govern statics and strength of materials. Graphical and numerical methods for designing and analyzing structures are used.
Prereq: PHYS 111, PHYS 111L, MATH 143, ARCH 266 .

ARCH 362 Structural Systems II
3 credits
Project based course with focus on the overall building behavior of framing systems. Graphical and numerical methods for designing and analyzing structures are used.
Prereq: ARCH 361 .

ARCH 385 Global History of Architecture
3 credits
A global survey of architecture and urban design from its beginnings through the seventeenth century, considered within the social, cultural, religious, and political contexts that shape it. Recommended Preparation: ARCH 151.

ARCH 386 Global History of Architecture II
3 credits
A global survey of architecture and urban design from the Enlightenment to the present, considered within the social, cultural, political and technological contexts that shape it.

ARCH 388 Architectural Theory
3 credits
This course is aimed at familiarizing students with key movements, thinkers, and developments in architectural theory's continued evolution, so that they are prepared to go into the world and produce thoughtful work and well-crafted thought.
Prereq: ARCH 151 .

ARCH 400 (s) Seminar
Credit arranged.

ARCH 403 (s) Workshop
Credit arranged.

ARCH 404 (s) Special Topics
Credit arranged.

ARCH 410 Sketching for Architecture
3 credits
Instruction in intermediate through advanced architectural sketching, painting, and place-recording techniques. A variety of media techniques will be employed, including graphite, charcoal, colored pencil, pen & ink, and watercolor. The majority of work will be completed in class, with additional homework assignments outside class and on field trips. Recommended Preparation: Basic sketching abilities, as developed in ARCH 154 and subsequent architectural design studios.

ARCH 411 Native American Architecture
3 credits
Gen Ed: American Diversity
Joint-listed with ARCH 511, Cross-listed with AIST 411
An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

ARCH 415 Instructional Assistant
1-3 credits, max 6
Assist instructors in delivering courses including classroom and teaching technology set up, taking roll, and other administrative or logistical tasks. Assistants may also (at instructor direction) work with students on design studio critiques, discussion or other related activities. Instructional assistants cannot award or enter grades.
Prereq: Fourth year standing in architecture programs.

ARCH 416 Social Sustainability in Contemporary Cities
3 credits
Joint-listed with ARCH 516
Seminar provides an overview of the social dimension of sustainability and its related issues in contemporary cities in the world. Exploration of concepts and strategies of social urban sustainability through case studies to critically evaluate urban governance and policies in both developed and developing countries, and assessment of struggles for social justice and equality. Additional projects/assignments required for graduate credit.

ARCH 421 China Program Preparation Seminar
2 credits
Joint-listed with ARCH 521
Seminar course preparing students for summer study abroad program in China. This course will introduce travelling, money management, safety, visa application, and some basic cultural introductions. Also, this class will introduce the academic courses to be undertaken in China and prepare research data collection. Required for all students enrolled in the China program. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: ARCH 353 or LARC 353 .

ARCH 422 China's Urbanization Seminar
2 credits
Joint-listed with ARCH 522
Seminar course conducted in China, focusing on understanding the complicated challenges of China's urbanization and design strategies for urban development.
Prereq: ARCH 354 or LARC 365 .

ARCH 423 Cultural & Ethical Issues in Global Architectural Practice
2 credits
Joint-listed with ARCH 523
Study of the phenomenon of architectural practice under the impact of globalization using the market of China as an example. Focus on the development of model architectural practice in China as well as the associated social and cultural issues of global architectural practice.
Prereq: ARCH 354 or LARC 365 .

ARCH 430 Rome Preparatory Seminar
2 credits
Seminar preparing students for summer study abroad in Rome, Italy. Introduces academic courses to be taken in Rome, and begins research and information-gathering tasks for Design Studio and Rome Design History courses. Also includes practical matters such as travel planning, money, safety, and basic language skills. Cooperative: open to WSU degree-seeking students. (Spring only)

ARCH 431 Rome Design History
3 credits
Lecture course conducted in Rome, Italy, focused on the essential eras of Roman history related to design (art, architecture, urban planning, etc.): Republican & Imperial Rome; Early Christian Rome; Renaissance & Baroque Rome; the "Third Rome" of the Risorgimento and Mussolini; Contemporary Rome of the late-20th and early-21st Centuries.
Prereq: ARCH 430 .

ARCH 432 Advanced Analog Graphics
3 credits
Joint-listed with ARCH 532
Advanced sketchbook and large-format drawing development focused on the built environment. Analog (i.e. physical) media, including graphite, Ink and watercolor. Additional projects/assignments required for graduate credit.
Prereq:ARCH 154 and ARCH 254; or Permission .

ARCH 454 Architectural Design: Vertical Studio
6 credits, max 12
Gen Ed: Senior Experience
Joint-listed with ARCH 554
Architectural and/or urban design projects are developed to explore and integrate urban theory sustainable design, construction & environmental control systems technology, experimental design approaches, human and cultural factors, and construction assemblies. Design projects completed individually or in team/collaborative settings encouraged. Three 3-hr studios per week and assigned work. Field trips at student expense are required and meet outside scheduled hours; some class critique sessions meet outside of scheduled hours. Additional projects/assignments required for graduate credit.
Prereq: ARCH 353 and ARCH 354; or Permission .

ARCH 461 Building Assemblies
3 credits
Advanced building construction with focus on building enclosure systems and assemblies.
Prereq: ARCH 362, ARCH 463, or instructor permission .

ARCH 463 Environmental Control Systems I
3 credits
Principles and design of sustainable passive energy systems, mechanical heating and cooling systems, air quality, fire suppression and vertical transport. Three 1-hr lec a wk.
Coreq: ARCH 463L .

ARCH 463L Environmental Control System I Lab
1 credit
Laboratory to accompany the ARCH 463 lecture. One 2-hour lab a week.
Coreq: ARCH 463 .

ARCH 464 Environmental Control Systems II
3 credits
Principles and design of integrated natural and electrical lighting systems, water use and conservation systems, storm and waste water treatment and management, and acoustic systems as well as principles for and evaluation of sustainable architecture. Three 1-hr lec a wk.
Coreq: ARCH 464L .

ARCH 464L Environmental Control System II Lab
1 credit
Laboratory to accompany the ARCH 464 lecture. One 2 hour lab a week.
Coreq: ARCH 464 .

ARCH 475 Professional Practice
3 credits
Joint-listed with ARCH 575
Overview of professional standards and practices in the architecture and interior design professions. Including duties and responsibilities in practice (construction documents and contracts, code analysis, ethics, and professional organizations and alliances), project management, office administration, and comprehensive services; specification writing, unit costs, and building estimation. Additional assignments/projects required for graduate credit.

ARCH 483 Urban Theory and Issues
3 credits
History and theory of city planning and problems associated with urban growth.

ARCH 498 (s) Internship
Credit arranged.

ARCH 499 (s) Directed Study
Credit arranged.

ARCH 500 Master's Research and Thesis
Credit arranged.

ARCH 501 (s) Seminar
Credit arranged.

ARCH 502 (s) Directed Study
Credit arranged.

ARCH 503 (s) Workshop
Credit arranged.

ARCH 504 (s) Special Topics
Credit arranged.

ARCH 505 Architectural Research Methods
3 credits
Quantitative and qualitative research designs, procedures, instruments, and techniques for use in architectural research, programming and design.
Prereq: Grad standing in M.Arch./M.A. program.

ARCH 510 Graduate Project Seminar
3 credits
Specialized research and program writing in preparation for ARCH 556 as well as schematic design proposals.
Prereq or Coreq: ARCH 553 .

ARCH 511 Native American Architecture
3 credits
Joint-listed with ARCH 411, Cross-listed with AIST 411
An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

ARCH 512 Identity and Place in Global Space
3 credits
A seminar focused on contemporary issues related to architecture in an increasingly globalized world. Themes, theories, and issues may include symbolic architecture and identity, colonization/postcolonialism/neocolonialism, modernity and tradition, space and power, themed spaces/simulacra, ethnoburbs and globurbs, and transnational planning processes. Recommended Preparation: ARCH 386.

ARCH 516 Social Sustainability in Contemporary Cities
3 credits
Joint-listed with ARCH 416
Seminar provides an overview of the social dimension of sustainability and its related issues in contemporary cities in the world. Exploration of concepts and strategies of social urban sustainability through case studies to critically evaluate urban governance and policies in both developed and developing countries, and assessment of struggles for social justice and equality. Additional projects/assignments required for graduate credit.

ARCH 517 Graduate Instructional Assistant
1-3 credits, max 6
Assist instructors in delivering undergraduate courses including classroom and teaching technology set up, taking roll, and other administrative or logistical tasks. Assistants may also (at instructor direction) work with students on design studio critiques, discussions or other related activities. Graduate Instructional assistants may also contribute to the evaluation and grading process, but final grade is the responsibility of the instructor of record.
Prereq: Graduate standing in architecture program.

ARCH 520 Architectural Research Methods
3 credits
Philosophy of research in architecture, research design, data gathering and interpretation, and thesis preparation.

ARCH 521 China Program Preparation Seminar
2 credits
Joint-listed with ARCH 421
Seminar course preparing students for summer study abroad program in China. This course will introduce travelling, money management, safety, visa application, and some basic cultural introductions. Also, this class will introduce the academic courses to be undertaken in China and prepare research data collection. Required for all students enrolled in the China program. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: ARCH 353 or LARC 353 .

ARCH 522 China's Urbanization Seminar
2 credtis
Joint-listed with ARCH 422
Seminar course conducted in China, focusing on understanding the complicated challenges of China's urbanization and design strategies for urban development.
Prereq: ARCH 354 or LARC 365.

ARCH 523 Cultural & Ethical Issues in Global Architectural Practice
2 credits
Joint-listed with ARCH 423
Study of the phenomenon of architectural practice under the impact of globalization using the market of China as an example. Focus on the development of model architectural practice in China as well as the associated social and cultural issues of global architectural practice.
Prereq: ARCH 354 or LARC 365 .

ARCH 532 Advanced Analog Graphics
3 credits
Joint-listed with ARCH 432
Advanced sketchbook and large-format drawing development focused on the built environment. Analog (i.e. physical) media, including graphite, Ink and watercolor. Additional projects/assignments required for graduate credit.
Prereq: ARCH 154 and ARCH 254; or Permission.

ARCH 552 Alternate Graduate Design Experience
6 credits
Independent exploration of specific issues in architecture and/or urban design, including off-site, national or international education or professional experiences, for qualified students. An application, including Independent study plans and credits must be approved by the Department during the semester before the proposed study. May be substituted for ARCH 554.
Prereq: B.S. Architecture.

ARCH 553 Integrated Architectural Design
6 credits
Integrative design of an architectural project including all phases of the design process with particular emphasis on schematic design and design development. Demonstration of ability to develop spatial details and construction systems concepts in support of design goals. Three 3-hr studios per week and assigned work; field trips reqd at student expense outside of scheduled hours; some class critique sessions will meet outside of scheduled hours.
Coreq: ARCH 568 .

ARCH 554 Architectural Design: Vertical Studio
6 credits, max 12
Joint-listed with ARCH 454
Architectural and/or urban design projects are developed to explore and integrate urban theory sustainable design, construction & environmental control systems technology, experimental design approaches, human and cultural factors, and construction assemblies. Design projects completed individually or in team/collaborative settings encouraged. Three 3-hr studios per week and assigned work. Field trips at student expense are required and meet outside scheduled hours; some class critique sessions meet outside of scheduled hours. Additional projects/assignments required for graduate credit.
Prereq: ARCH 353 and ARCH 354; or Permission .

ARCH 556 Graduate Project
6 credits
Graduate terminal project - a self-directed architectural design study with faculty consultation within a studio context. Students demonstrate their capacity to apply appropriate programming and research methods in pursuit of a focused design topic. The project culminates with a project book prepared by the student.
Prereq: ARCH 510, ARCH 553, and ARCH 554 .

ARCH 558 Urban Design and Planning Studio
3 credits
Urban Design and Planning studio serves as a fundamental urban design studio, providing appropriate skills in design-led planning for students in the Urban Design Certificate program that are not in the professional M.Arch. or MLA programs. This class is place-based studio, emphasizing the understanding of urban design as a place-making process and product within the dynamic of change to the urban environment. Students do not need a background in design to participate in this studio. This course may meet with ARCH 554.

ARCH 568 Technical Integration in Design
3 credits
Strategies for integrating structure, enclosure, services, site and interior systems in the design and development of an architectural concept.
Prereq: ARCH 461, ARCH 463, ARCH 464, or equivalent .

ARCH 570 Natural Lighting
3 credits
Natural lighting seminar/workshop including hands-on experience with physical and digital modeling techniques. The course includes a term-long investigation of the nature of Palouse light, and a redesign problem of a real space on-campus or nearby, which will be measured, modeled, redesigned, predicted, redesigned, and evaluated.

ARCH 571 Building Performance Evaluation
3 credits
This case-study based course focuses on evaluation methods for occupied buildings. A full-range of physical measurement and user surveying techniques are presented and employed on local buildings.

ARCH 573 Daylight Design and Simulation
3 credits
This course teaches the fundamental principles for daylighting design in buildings through building tours, case studies, geometric approaches, as well as physical modeling and digital simulation methods. Students will understand implications of design decisions on visual comfort, thermal comfort and performance, energy efficiency and will have the skills to scientifically asses these factors during design stages.

ARCH 574 Building Performance Simulation for Integrated Design
3 credit
Cross-listed with ME 571
This course focuses on design decisions that impact energy, thermal, visual and acoustic comfort with a strong emphasis on building simulation tools. This course provides students with the understanding of the nature of building thermal comfort, building envelope behavior, ventilation requirements, indoor air quality, passive cooling systems, energy conservation, and the importance of iterative building simulation in achieving high performance buildings.

ARCH 575 Professional Practice
3 credits
Joint-listed with ARCH 475
Overview of professional standards and practices in the architecture and interior design professions. Including duties and responsibilities in practice (construction documents and contracts, code analysis, ethics, and professional organizations and alliances), project management, office administration, and comprehensive services; specification writing, unit costs, and building estimation. Additional assignments/projects required for graduate credit.

ARCH 580 British Green Architecture
2 credits
Preparation for students who will participate in the summer studies abroad program in London, including basic research on green building in the UK, helping plan the itinerary. All logistical preparations for studies abroad will be discussed and students are familiarized with both green approaches to design and British culture. Cooperative: open to WSU degree-seeking students. (Spring only)

ARCH 585 Urban Design Seminar
3 credits
On-line course, covering a broad view of Urban Design as an academic discipline and a field of practice in planning and design of the built environment.

ARCH 598 (s) Internship
1-3 credits, max 6
Work in an architectural office under the supervision of a licensed architect.
Prereq: Permission.

ARCH 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ART (ART)

Note: On registering for a studio course offered in this department, the student agrees that the department may retain work completed by the student.

Vertically-related courses in this subject field are:

- ART 111--ART 112--ART 211--ART 390
- ART 221--ART 222--ART 321--ART 322
- ART 231--ART 330
- ART 241--ART 340
- ART 251--ART 350
- ART 271--ART 272--ART 370

ART 100 World Art and Culture
3 credits
Gen Ed: Humanities, International
An introductory historical survey of art and culture in Western and non-Western contexts. Major cultural sites, monuments, image traditions and technologies will be examined alongside the historical, religious, political, economic, and aesthetic contexts which produced them. Cultures studied include China, Islam, Pre-Columbian civilizations in North and South America, Africa, India, Japan, Oceania, the ancient Near-East, Greece and Rome, Western Medieval, the European Renaissance, and Western and non-Western Modernism. A theoretically comparative approach will be followed, towards an understanding of both similarities and differences between Western and non-Western cultural production. 2 hours of lecture with one 2-hour lab/recitation.

ART 110 Integrated Art and Design Communication
2 credits
Introduction to the history, theory, language, principles and processes of art and design. Lectures, readings and writing assignments are connected to the studio experiences in ART 121.

ART 111 Drawing I
3 credits
Freehand drawing; emphasis on expressive use of materials. Two 2-hour studios a wk.

ART 112 Drawing as Integrated Design Thinking
2 credits
Emphasis on drawing as a form of thinking and communication in art and design disciplines; studio problems to familiarize students with strategies using drawing for analogy, translation, imagination and abstraction. Two 2-hour studios a week.

ART 121 Integrated Design Process
2 credits
Introduction to design process as it relates to art and design disciplines; studio problems to familiarize students with basic design process, principles and elements of design. Studio experiences, readings, and written analysis challenge students to explore basic two- and three-dimensional design and color. Two 2-hour studios a week and assigned work; attendance at outside events (lectures, symposiums, Prichard and University Gallery openings).
Prereq or **Coreq:** ART 110 .

ART 122 Art & Design Process
3 credits
Continuation of study of design process; studio problems challenge students to apply elements and principles of design to studio problems that include traditional and experimental concepts of design. Studio experiences, readings, and written analysis allow for further exploration of two- and three-dimensional design as well more complex concepts such as context, time, and light. Two 3-hr studios a wk and assigned work; attendance at outside events (lecs, symposiums, Prichard and Univ Gallery openings).

ART 200 (s) Seminar
Credit arranged.

ART 203 (s) Workshop
Credit arranged
Prereq: Permission.

ART 204 (s) Special Topics
Credit arranged.

ART 205 Visual Culture
3 credits
Gen Ed: Humanities
An introduction to the interdisciplinary approaches in art history, visual studies, film and media studies, sociology, and the general field of cultural studies that constitute the field of visual culture. Visual Culture addresses the societal, cultural, economic, aesthetic, and political dimensions and provocations of images and the visual in our contemporary world. This course offers a broad introduction to the most important critical and theoretical methods for the analysis, critique, and evaluation of visual culture.

ART 211 Life Drawing
3 credits
Life drawing, work with various media to develop an understanding of the human figure. Two 3-hr studios a wk and assigned work.
Prereq: ART 111 and ART 112, or Permission.

ART 213 History and Theory of Modern Design
3 credits
Gen Ed: Humanities, International
This course explores the historical and theoretical components of design from the Industrial Revolution to WWII. Products, furniture, textiles, packaging, advertising, industrial design, and graphic design will be studied in terms of their historical development, theoretical components, and their translation and application within contemporary concepts of design in various professional fields. Throughout the course we will critically examine and address the theoretical and critical vocabulary of contemporary design. Topics considered include industrialization and modernism; design and propaganda; design and the modernist avant-garde; design and nationalism; design, multinational corporations, and global economics; design, promotion, profession, and management; the politics and economics of design, and design and advertising.

ART 216 Digital Tools
3 credits
Introduction to professional design, development, and production workflows related to various aspects of digital design. Demos and lectures cover various industry standard design software. Two 2-hr studios a week and assigned work.
Prereq: ART 110 and ART 121; or Permission .

ART 217 Ancient & Pre-Modern Art
3 credits
A survey of ancient to early modern art, covering the period from classical antiquity through neoclassicism and the industrial revolution. Particular care will be taken to situate the art, architecture, and design of each period in its cultural, political, and religious contexts. Basic methods and approaches of art history will be also be covered. Classes will be mostly lectures, with discussion of primary sources. No prior experience with art or history is required.

ART 221 Introduction to Graphic Design
3 credits
Creative problem solving with emphasis on two dimensional solutions to formal and conceptual design problems; fundamental design principles are reiterated and developed into visual communication using wordand image., Design process, prototyping and industry standard software will be used. Recommended Preparation: Working knowledge of digital design software or ART 216 (strongly recommended). Two 3-hour studios a week and assigned work.

ART 222 Introduction to Typography
3 credits
Visual communication design with emphasis on typography, letterforms, and typographic syntax. Ideas are developed into thoughtful visual communication through the exploration of typographic conventions and the use of type as image. Introduction to history and theory of typography. Working knowledge of digital design software or ART 216 (strongly recommended).Two 3-hour studios a week and assigned work.

ART 231 Painting I
3 credits
Intro to basic fundamentals of painting; investigating color and techniques. Two 3-hour studios a week and assigned work.
Prereq: ART 111 or Permission.

ART 241 Sculpture I
3 credits
Introductory studio environment with emphasis on basic design principles and techniques, tool safety, material exploration, and the development of unique personal expressions in three dimensions. Two 3-hour studios a week and assigned work.

ART 251 Printmaking I
3 credits
Intro to basic printmaking techniques, relief, intaglio, and monotype; emphasis on sensitivity to materials and individual development.

ART 261 Ceramics I
3 credits
Introductory studio environment with emphasis on basic design principles and techniques, hand-built forming methods, development and articulation of individual design criteria, and glaze and surface experimentation. Two 3-hour studios a week and assigned work.

ART 271 Interaction Design I
3 credits
Introduction to User Experience (UX) and User Interaction (UI) design practices, including usability strategies and user testing, with emphasis on design and development for mobile devices. Exercises and projects assigned will address production project workflows including: project proposal, product identity, design personas, user personas, development of user interfaces, documentation of product user flows, and live prototyping using industry standard software. Two 3-hour studios a week and assigned work. Recommended Preparation: Working knowledge of digital design software or ART 216 (strongly recommended).

ART 272 Experiential Design I
3 credits
Introduction to Experiential Design. Immersive storytelling, place making, and theming. Exercises and projects explore a variety of scenarios, including retail and dining, entertainment, and cultural and educational venues.Two 3-hour studios a week and assigned work. Recommended Preparation: Working knowledge of digital design software or ART 216 (strongly recommended).

ART 280 Understanding Photography
3 credits
Basic skills of camera operation; emphasis on image design and creative techniques; lec topics include exposure, lenses, composition, filters, and films. 35mm adjustable camera required, plus additional costs for photographic materials. Two lecture and one 3-hour recitation a week.

ART 299 (s) Directed Study
Credit arranged.

ART 302 Modern Art and Theory
3 credits
Gen Ed: Humanities, International
A study of the principal artistic movements and theories in modern art from c. 1880 to World War II. Beginning with late-nineteenth-century modernism, the course closely examines the historical, societal, cultural, philosophical, and theoretical frameworks from which modern art and theory emerged. Modernist movements to be considered include, Neoimpressionism, Symbolism, Fauvism, German Expressionism, Futurism, Cubism, Dada, and Surrealism, among others.

ART 303 Contemporary Art and Theory
3 credits
Gen Ed: International
A survey of the principal artists, movements, theories, and artistic strategies since World War II in Europe and America. Important movements examined include the New York School, Neo-dada, Post-Painterly Abstraction, British and American Pop, Minimalism, Conceptual art, Earthworks and Environments, Performance Art, Neoexpressionism, and the various approaches within contemporary art.
Prereq: One 200-level or 300-level art history elective, or Permission.

ART 313 History and Theory of Modern Design
3 credits
Gen Ed: International
Study, analysis, and critique of design history and theory from 1945 to the present. Historical and theoretical analysis of the emergence of the industrial, product, graphic, and information design professions in America and Europe, and the relationship between design, corporations, and global products. Other topics under consideration include Swiss design, the New York School and the American poster movement; the emergence of Japanese design; semiotics and design; postmodernism and design; and design and new media.
Prereq: ART 213.

ART 321 Graphic Design: Concepts
3 credits, max 6
Advanced design problems that center on individual development and the exploration of contemporary design issues. The conceptual potential of words and images is emphasized. Individual and group work. Two 3-hour studios a week and assigned work.
Prereq: ART 221 and ART 222, or Permission.

ART 322 Graphic Design: Studio
3 credits, max 6
Visual communication design and problem solving in the community environment; strategies for client interaction, project presentation and production preparation are practiced. Two 3-hour studios a week and assigned work.
Prereq: ART 221 and ART 222, or Permission.

ART 323 History of Typography
3 credits
History and Theory of Typography: Historical and theoretical survey of typography and graphic technologies from the invention of writing to the present. The course begins with the study of writing before the printing press and continues detailing the origin of European typography and design for printing through the Industrial Revolution and the invention of photography. The study of typography in the modernist era follows, including close examination of Bauhaus and Neue Typographie, the Swiss Neue Graphik and subsequent developments in America and abroad. A detailed study of the practical, historical, and theoretical implications of digital typography will conclude the course.

ART 330 Intermediate/Advanced Painting
3 credits, max 9
Intermediate painting in oil or acrylic; emphasis on color assignments and aesthetic problems. Advanced students emphasize individual conceptual approaches. Two 3-hour studios a week and assigned work.
Prereq: Art Core and ART 231 or Permission.

ART 340 Intermediate/Advanced Sculpture
3 credits, max 9
Intermediate level studio environment with emphasis on promoting tool safety, material exploration, creative autonomy, portfolio development, and comprehension of historical and contemporary issues relevant to studio projects and sculpture discourse. Two 3-hour studios a week and assigned work.
Prereq: Art Core, ART 241 or Permission.

ART 350 Intermediate/Advanced Printmaking
3 credits, max 9
Advanced printmaking; further exploration of printmaking methods and materials; emphasis on individual development in conceptual and technical abilities. Two 3-hour studios a week and assigned work.
Prereq: Art Core and ART 251 or permission.

ART 360 Intermediate/Advanced Ceramics
3 credits, max 9
Intermediate and Advanced level studio environment with further exploration of ceramic methods including wheel-thrown building techniques, kiln and studio procedures, creative autonomy, portfolio development, and comprehension of historical and contemporary issues relevant to studio projects and ceramics discourse. Two 3-hour studios a week and assigned work.
Prereq: Art Core and ART 261; or Permission.

ART 370 Intermediate/Advanced Interaction + Experiential Design
3 credits, max 9
Building on the coursework of ART 271 and ART 272, intermediate/advanced combination of both the built environment and virtual experiences as expressed in the development of individual, term-length projects. Two 3-hr studios a week and assigned work.
Prereq: Art core, ART 216, ART 271 and ART 272; or Permission .

ART 380 Digital Imaging
3 credits
Computer imaging with emphasis on visual problem solving and design; development of professional techniques with industry standard software.
Prereq: ART 216.

ART 382 History of Photography
3 credits
Gen Ed: Humanities, International
History and development of photography in its various forms; photography as a creative art form and a reflection of society; selected slide lectures.

ART 390 Mixed Media
3 credits, max 9
Understanding synthesis of different media in context to a work of art by using two or more techniques; tutorial-based studio, production to occur outside of class. Outside lecture and special events may be assigned.
Prereq: Art Core, 9 cr of 200-level art studios, or Permission.

ART 400 (s) Art Seminar
1-3 credits, max 6.

ART 403 (s) Workshop
Credit arranged
Prereq: Permission.

ART 404 (s) Special Topics
Credit arranged.

ART 405 (s) Professional Development
Credit arranged.

ART 407 New Media
3 credits
Gen Ed: Humanities
Study, analysis, and critique of the cultural, technological, and aesthetic dimensions and practices of new media. The course entails a detailed examination of the genealogy, historical and cultural ramifications of the computer as an expressive medium. We will study the history of the computer and the digital, from its pre-conception in literature and science, to its various manifestations today in information, political, aesthetic, technological, and cultural contexts. Throughout the course students will analyze and evaluate the constantly changing provocations of new media in terms of communication, language, art, design, architecture, and the general ontological issues of time and space.

ART 409 Visual Studies
3 credits
Examination, evaluation, and critique of the expanding interdisciplinary field of visual studies. Visual practices, technologies, communicative, and epistemological models and structures are studied in terms of their implications for art, design, architecture, and cultural and scientific practices and production in general. The historical, theoretical, and aesthetic provocations of visualization in such varied fields as biology, medicine, law, forensics, genetics, and information technologies is addressed as well as the cultural dimensions of the social ubiquitousness of the visual in general. Recommended preparation: ART 205.
Prereq: 12 credits of Art History/Visual Culture courses.

ART 410 Professional Practices
2 credits
Gen Ed: Senior Experience
Professional issues for studio artists and designers including obligations, duties, and responsibilities in practice, self-promotion, and career planning. Includes analysis of gallery operations.
Prereq: Advanced standing or Permission.

ART 411 Advanced Studio Practice
3 credits, max 6
Faculty directed advanced studio practices in a variety of media. Two 3-hour studios a week and assigned work. Additional requirements will be assigned for graduate students.
Prereq: Art Core and by Permission .

ART 488 Faculty Directed Internship
1-3 credits, max 6
Open only to art majors. Art faculty directed work on a professional project.
Prereq: successful completion of one 300-level studio sequence (6 cr), and advisor and directing faculty approval.

ART 490 BFA Art/Design Studio
6 credits, max 12
Gen Ed: Senior Experience
Open only to BFA studio art majors. Intensive tutorial studio closely monitored by all the faculty, culminating in development of a portfolio and a professional exhibition. Outside lec and special events may be assigned. Twelve formal hrs of studio a wk plus outside work to equal 18 hours of involvement a week; field trips and guest lectures may be required.
Prereq: Senior standing and completion of 15 cr in 300-level art courses with a minimum grade of C and a minimum GPA of 2.75 .

ART 491 Information Design
3 credits, max 9
Gen Ed: Senior Experience
Project-based course in theory and practice of the design of information and information visualization for use in research, teaching, and outreach. Interdisciplinary teams of students, faculty and staff will develop and produce systems that communicate complex ideas with clarity, precision, and efficiency, using the most appropriate presentation tools.
Prereq: Junior standing.

ART 495 Critical Art Writing Seminar
3 credits
Gen Ed: Senior Experience
Open only to B.F.A. Art and Design majors who have been admitted to the professional program through the BFA Art and Design Review. Writing portfolio includes: visual analysis, short essay, statement of intent, artist's statements, and other pertinent types of writing.
Prereq: Senior standing and completion of 15 cr in 300-level art courses with a minimum grade of C and a minimum GPA of 2.75.

ART 497 (s) Practicum In Instruction
1-3 credits, max 6
Tutorial and/or instructional services performed by advanced students under faculty supervision.
Prereq: Permission.

ART 498 (s) Internship
1-12 credits, max 12
Graded P/F. Open to art majors only; no more than 6 cr may be counted toward art degree requirements. Work with professional artists.
Prereq: One 300-level studio sequence (6 cr) and permission of department chair.

ART 499 (s) Directed Study
1-3 credits, max 9
Individual study areas selected by the student and approved by the faculty; it is the student's responsibility to select a study area and prepare a semester study program; the student contacts one of the art faculty who agrees to direct the study; it is the student's responsibility to initiate the study program and to maintain regular contact with the faculty member who has agreed to direct the study.
Prereq: Completion of one 300-level studio sequence (6 cr) and Permission.

ART 500 Master's Research and Thesis
Credit arranged.

ART 501 (s) Seminar
Credit arranged.

ART 502 (s) Directed Study
Credit arranged.

ART 503 (s) Workshop
Credit arranged.

ART 504 (s) Special Topics
Credit arranged.

ART 505 (s) Professional Development
Credit arranged
Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward grad degree program, but may be used in a fifth-year program. Additional projects/assignments required for grad cr.

ART 507 (s) Art Seminar
3 credits, max 6
Open only to art majors. Seminar in professional art concerns: guest artist programs, University Gallery activities, including field trips. One 2-hour seminar a week and assigned work.

ART 508 (s) Readings in Art and Design
3 credits
Exploration and analysis of issues surrounding contemporary and historical practices of artistic production. Open to all graduate students. Seniors with a sufficient GPA or higher may enroll per UI catalog and College of Graduate Studies requirements with instructor permission.

ART 513 Pedagogy Seminar
3 credits
This seminar designed for Graduate students teaching and/or interested in teaching in higher-ed creative classrooms. Assignments and discussions designed to further critical awareness and build adaptive strategies that foster engagement in a contemporary, creative classroom
Prereq: Instructor permission .

ART 515 (s) Art Faculty Studio
3-6 credits, max 12
Open only to art majors. Studio research taken with support of art & design faculty group; at least three intensive studio critique presentations required each semester.

ART 516 (s) MFA Art Studio
3-6 credits, max 9
Open only to MFA art majors. Studio research taken from two or more art faculty members.

ART 520 (s) Studio Workshops
1-3 credits, max 6
Open only to art majors. Specialized studio experience; offered by art faculty members, faculty groups, and/or guest artists.

ART 521 (s) MFA Individual Critique
3 credits, max 9
Open only to MFA art majors. Studio research taken from individual art faculty members; individual instruction and critiques. One hour a week critique session and 8 hours a week of individual studio research.

ART 570 Internet Portfolio Development
3 credits
Preparation of an online portfolio suitable for critiques and reviews. Limited to students admitted to a graduate Art & Design degree program.

ART 590 (s) MFA Thesis Exhibition
4-8 credits, max 20
Open only to MFA majors. Studio research directly related to preparation of MFA "Exhibition and Statement.".

ART 597 (s) Practicum
3 credits, max 6
Hands-on experience in classroom teaching and gallery practice conducted under supervision of faculty or gallery director. Normally requires 4-6 hours a week in class and assigned work.
Prereq: Major in the College of Art and Architecture or permission of individual faculty and art graduate coordinator.

ART 598 (s) Internship
1-6 credits, max 6
Open only to art majors. Work with professional artists.
Prereq: Permission of major professor and department chair.

ART 599 (s) Non-thesis Master's Research
Credits arranged.

ATHLETIC TRAINING (AT)

AT 502 (s) Directed Study
Credit arranged.

AT 504 (s) Special Topics
Credit arranged.

AT 506 Clinical Anatomy I
3 credits
Theory and practice of clinical anatomy as it pertains to the lower extremity through the thoracic spine.

AT 507 Care and Prevention of Injuries and Illnesses
3 credits
Theory and practice of recognition, treatment, and prevention of injuries and illnesses.

AT 508 Evaluation and Diagnosis of Injuries and Illnesses I
4 credits
Theory and practice of musculoskeletal evaluation and diagnosis as it pertains in the lower extremity through the thoracic spine.

AT 509 Principles of Rehabilitation
3 credits
Theory and practice of the scientific foundations of musculoskeletal rehabilitation.

AT 510 Therapeutic Modalities
2 credits
Theory and practice of therapeutic modalities including thermotherapy, cryotherapy, and mechanical modalities.

AT 511 Ethics and Administration in Athletic Training
3 credits
Theory and practice of ethics and administration in athletic training.

AT 512 Research Methods & Statistics I
3 credits
Theory and application of research methods for the health professions, including research design, research question development, ethical considerations, methods of measurement, and critical appraisal of the current literature.

AT 513 General Medicine for Athletic Trainers
3 credits
Theory and practice of general medical conditions related to athletic training.

AT 514 Psychology of Injury and Referral
3 credits
Theory and practice of the psychology of injury and referral in Athletic Training.

AT 520 Clinical Education I
2 credits
Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level I clinical educational competencies.

AT 521 Clinical Experience I
4 credits
Clinical practice in athletic training under the direct supervision of a Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 522 Clinical Education II
2 credits
Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level I clinical educational competencies.

AT 523 Clinical Experience II
4 credits
Clinical practice in athletic training under the direct supervision of a Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 531 Clinical Anatomy II
3 credits
Theory and practice of clinical anatomy as it pertains to the head, neck and upper extremity through the thoracic spine.

AT 532 Evaluation and Diagnosis of Injuries and Illnesses II
4 credits
Theory and practice of musculoskeletal evaluation and diagnosis as it pertains in the upper extremity through the thoracic spine.

AT 533 Applied Rehabilitation Techniques
3 credits
Theory and practice of rehabilitation techniques as applied to individual physical pathologies.

AT 534 Therapeutic Modalities II
2 credits
Theory and practice of therapeutic modalities including electrotherapy.

AT 535 Seminar in Athletic Training
1 credit
Seminar addresses a year one comprehensive exam process. All topics learned in the first year of the program are eligible for testing.

AT 536 Research Methods & Statistics II
3 credits
This course introduces quantitative research design, methods of measurement, and data analysis skills for health care professionals. Students will develop an understanding of quantitative design, while also developing skills to perform and interpret basic data analysis procedures relevant to athletic training.

AT 540 Pharmacology for Athletic Trainers
3 credits
Clinical pharmacology for athletic trainers as it relates to athletic training educational competencies.

AT 541 Seminar in Athletic Training II
2 credits
Seminar addresses a year two comprehensive exam process. All topics learned in both years of the program are eligible for testing.

AT 542 Scientific Inquiry and Research Presentation
3 credits
This course will provide students with the foundational knowledge to evaluate scholarship and prepare works for scholarly dissemination. MSAT students will present their research findings to the group of faculty and students. All presentations will be graded by the faculty and be accepted or rejected.

AT 543 Neuroscience for Athletic Trainers
3 credits
This course will provide students foundational knowledge of neuroscience and how its application for common neuromuscular conditions (e.g. acute and chronic pain, somatic dysfunction, and motor neuron disorders) can be utilized in the clinical practice of athletic training to improve therapeutic outcomes. Students will examine and synthesize current research and case studies based on neuroscience principles and applications to ascertain the most appropriate therapeutic interventions to be utilized to improve patient healing and satisfaction.

AT 547 Critical Issues in Athletic Training Clinical Practice
3 credits
This course prepares students to recognize challenges and develop strategies for solving issues common in AT clinical practice.

AT 550 Clinical Education III
2 credits
Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level II clinical educational competencies.

AT 551 Clinical Experience III
4 credits
Clinical practice in athletic training under the direct supervision of a Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 552 Clinical Education IV
2 credits
Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level II clinical educational competencies.

AT 553 Clinical Experience IV
4 credits
Clinical practice in athletic training under the direct supervision of an Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 587 Prevention and Health Promotion in Athletic Training
3 credits
This course prepares AT students to develop and implement strategies to prevent the incidence and/or severity of injuries and illnesses and optimize patients overall health quality of life.

AT 600 Doctoral Research and Dissertation
1-45 credits.

AT 604 (s) Special Topics
Credit arranged.

AT 606 Professional and Post-Professional Education in Athletic Training
3 credits
This course is designed to introduce historical background of professional and post-professional education for health care professions. Theoretical foundations and models of health care education will be compared and contrasted. The impact of educational models to health care will be explored. Development of criteria to govern the practicing professional in their chosen residency will be accomplished.
Prereq: Permission .

AT 607 Leadership & Mentoring in AT Clinical Practice
3 credits
This course has been designed to initiate leadership and mentoring in AT clinical practice. Topics relating to leadership and mentoring will be discussed.

AT 610 Advances in Manual Therapy
3 credits
Selected readings from peer reviewed articles will be examined and discussed. Translation of research findings to current clinical practice will be emphasized.
Prereq: Permission .

AT 611 Integrative Manual Therapy
3 credits
Translation of research findings to current clinical practice will be emphasized. Novel intervention theories, techniques, strategies, will be presented, discussed, practiced as related to patient care and practice based evidence.
Prereq: Permission .

AT 620 Research Methods and Evidence Based Practice in Patient Care
3 credits
This course introduces common research performed in patient care. Development of in-depth understanding in areas and types of research underlying quantitative research design will be explored. Introduction to critiquing literature for the purpose of developing a theoretical framework will be included.
Prereq: Permission .

AT 621 Action Research in Patient Care
2 credits
This course sets the foundation for action research in clinical practice.Development of a research question and justification with literature review will be employed. Purpose and methods of institutional review will be evaluated. Further discussion will elucidate the importance of becoming a scholarly practitioner.
Prereq: Permission .

AT 622 Designing and Conducting Applied Research in Patient Care
2 credits
This continues the process of applied research in clinical practice. Development of methods to test a chosen hypothesis will be created. Exploration of statistical methods to test the clinician's hypothesis will be compared. Dissertation proposal will developed.
Prereq: AT 620 and AT 621 .

AT 623 Introduction to Survey and Qualitative Research Design in Patient Care
3 credits
This course introduces common qualitative methodologies and survey research design in patient care.
Prereq: AT 620, AT 621, and AT 622 .

AT 624 Advanced Quantitative Data Analysis and Interpretation in Patient Care
3 credits
This course provides an in-depth analysis of quantitative research design and data analysis for health care professionals. The goal is to prepare health care students to apply quantitative research design and data analysis skills in patient care. Students will develop sound understanding of research design and be able to utilize regression, factor analysis, and multivariate data analysis skills to answer important research questions in patient care. Students will learn to interpret and disseminate their findings to other health care professionals.
Prereq: AT 620, AT 621, AT 622, and AT 623 .

AT 625 Scientific Writing for Publication in Patient
3 credits
This course is a continuation of clinical research in healthcare and the completion of the Culminating Clinical Project (CCP).
Prereq: AT 620, AT 621, AT 622, AT 623, and AT 624 .

AT 630 Holistic Foundations of Pain in Patient Care
2 credits
This course explores current topics in clinical practice, related to the foundations of pain in the human body that influence quality care and methods of measurement and evaluation for quality assessment. Exploration to common instrumentation utilized by clinicians will be discussed and compared to literature utilizing the instruments for research purposes.
Prereq: Permission .

AT 631 Theory and Application of Current and Novel Paradigms in Patient Care
2 credits
Building on foundation of AT 630, this course illustrates the implications of holistic theories of pain by exploring and integrating appropriate novel interventions within efficacious patient care.
Prereq: Permission .

AT 632 Integrative Patient Care for the Spine and Pelvic Girdle
3 credits
This course explores current topics and causes of musculoskeletal injuries to the spine and pelvis. An in-depth look at epidemiology, biomechanics and other topics related to musculoskeletal injuries of the lumbar spine and pelvis will be emphasized.
Prereq: Permission .

AT 633 Application of Advanced Practice Skills: A Practice-Based Approach
3 credits
This course explores current topics of interest areas of practicing professionals. An in-depth look at theory, research, and art of the chosen interest area will be explored. Focus will be in critically analyzing areas such as; anatomy, pathophysiology, biomechanics, theoretical framework or ethical principles to explain the students chosen topic.
Prereq: Permission .

AT 634 Introduction to Quantitative Data Analysis and Interpretation in Patient Care
2 credits
This course introduces quantitative research design, methods of measurement, and introductory data analysis skills for health care professionals. The goals are for students to develop an introductory understanding of quantitative design, develop skills to perform basic data analysis procedures, and begin to develop the skills to interpret findings from quantitative data analysis research projects.
Prereq: Permission .

AT 635 Intermediate Quantitative Data Analysis and Interpretation in Patient Care
2 credits
This course provides an in-depth analysis of quantitative research design and data analysis for health care professionals. The goal is to prepare health care students to apply quantitative research design and data analysis skills in patient care. The goals are for students to develop sound understand of research design and be able to utilize correlational, reliability, and univariate data analysis skills to answer important research questions in patient care. Students will learn to interpret and disseminate their findings to other health care professionals.
Prereq: Permission .

AT 640 Clinical Residency and Analysis of Patient Care I
6 credits
This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures. Impact of the skill improvement to the organization and profession will be demonstrated.
Prereq: Permission .

AT 641 Clinical Residency and Analysis of Patient Care II
6 credits
This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures. Impact of the skill improvement to the organization and profession will be demonstrated.
Prereq: Permission .

AT 642 Clinical Residency and Analysis of Patient Care III
6 credits
This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures. Impact of the skill improvement to the organization and profession will be demonstrated.
Prereq: Permission .

AT 643 Clinical Residency and Analysis of Patient Care IV
6 credits
This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures do demonstrate improved patient care. Impact of the skill improvement to the organization and profession will be demonstrated. Summary of all impact of clinical residencies will be presented to the participant's organization
Prereq: Permission .

BIOINFORMATICS/ COMPUTATNL BIOL (BCB)

BCB 404 (s) Special Topics
Max arranged.

BCB 500 Master's Research and Thesis
Credit arranged.

BCB 501 (s) Seminar
Credit arranged
Students are required to attend all of the invited speaker presentations in the IBEST/CMCI/BCB seminar series for the semester they are enrolled. Students who miss one or more presentations are expected to attend an alternative seminar approved by the instructor. Additional meetings may be required by the instructor.

BCB 502 (s) Directed Study
Credit arranged.

BCB 503 (s) Workshop
Credit arranged.

BCB 504 (s) Special Topics
Credit arranged.

BCB 506 Laboratory Experience in the Biological Sciences
Credit arranged
Hands-on activities in an active research laboratory whose central research interests are in the biological or biochemical sciences.
Prereq: Admission to BCB program.

BCB 507 Laboratory Experience in the Computational Sciences
Credit arranged
Hands-on activities in an active research laboratory whose central research interests are in the computational sciences.
Prereq: Admission to BCB program.

BCB 508 Laboratory Experience in Mathematics or Statistics
Credit arranged
Hands-on activities in an active research laboratory whose central research interests are in the mathematics or statistics.
Prereq: Admission to BCB program.

BCB 509 Evolutionary Biology for non-Life Scientists
3 credits
This course is offered by Michigan State University as part of the National Science Foundation BEACON Science and Technology Center on 'evolution in action'. Life-scientists in general, and evolutionary biologists in particular, have a particular way of looking at the world that may seem unfamiliar or unusual to non-biologists. In this class, students learn to 'think' like an evolutionary biologist. This course builds a working understanding of biological evolution, enabling effective collaboration with evolutionary biologists. (Fall only)
Prereq: Graduate Standing .

BCB 510 Computational Science for Biologists
3 credits
This course is offered by Michigan State University as part of the National Science Foundation BEACON Science and Technology Center on 'evolution in action'. This course develops computational skills and quantitative reasoning abilities, computational thinking, and exposure to computational research in evolutionary and molecular biology. We introduce the Python programming language, scripting and pipelining, simulations, and data analysis. We also introduce the Avida artificial life program as a platform for in silico evolution experimentations. (Fall only)
Prereq: BIOL 421 or Instructor Permission .

BCB 511 Applied Bioinformatics
3 credits
A data driven approach to the computational and statistical understanding required to solve bioinformatics problems encountered in genome scale research. Recommended Preparation: CS 120, STAT 301, or BIOL 456. (Spring, alt/yrs)

BCB 512 Multidisciplinary Approaches to the Study of Evolution
3 credits
This course is offered by Michigan State University as part of the National Science Foundation BEACON Science and Technology Center on 'evolution in action'. This project-based course prepares students for team-based, multi-disciplinary and multi-institutional research into the evolutionary dynamics of biological and computational systems. The course objective is to recognize and overcome challenges such as discipline-specific languages, customs and world views. Students will also learn fundamentals of experimental design and statistical analysis. (Spring only)
Prereq: Graduate Standing .

BCB 597 (s) Practicum
Credit arranged.

BCB 598 (s) Internship
Credit arranged.

BCB 599 (s) Non-thesis Master's Research
Credit arranged.

BCB 600 Doctoral Research and Dissertation
Credit arranged.

BIOLOGICAL ENGINEERING (BE)

BE 142 Introduction to Biological Engineering
2 credits
An introduction to biological engineering and the engineering principles used to solve biological engineering problems. Fields of study within biological engineering will be discussed including agricultural, bioenergy, biomedical, bioprocess, ecohydrological and environmental engineering. Students will work on a team-based engineering project. One lecture and one 3-hour lab a week.

BE 204 (s) Special Topics
Credit arranged.

BE 242 Biological Engineering Analysis and Design
3 credits
Methods of analyzing and solving engineering problems; introduction to elements of biological engineering design; use of computers in engineering problem solving.
Prereq: MATH 170
Coreq: MATH 175.

BE 299 (s) Directed Study
Credit arranged.

BE 355 Fundamentals of Hydrologic Engineering
3 credits
Cross-listed CE 325
Principles of hydrologic science and their application to the solution of hydraulic, hydrologic, environmental, and water resources engineering problems.
Prereq: MATH 310, STAT 301, and ENGR 335. A minimum grade of 'C' or better is required for all pre/coreqs.

BE 361 Transport Processes in Biological Systems
3 credits
The course will familiarize students with transport phenomena processes involved in bio-related fields spanning from agricultural to environmental and medical to pharmaceutical.
Prereq: ENGR 320 and ENGR 335 .

BE 398 (s) Engineering Cooperative Internship
Credit arranged
Supervised internship in professional engineering settings, integrating academic study with work experience; details of the co-op to be arranged with supervising professor before the start of the co-op; requires written report. Graded P/F. Cannot be used for technical elective.
Prereq: Permission.

BE 404 (s) Special Topics
Credit arranged.

BE 411 (s) Industrial Energy Efficiency
1 credit, max 6
This course will provide students an understanding of major industrial energy consuming equipment, diagnostics of energy inefficiencies, and instrumentation for baselining energy efficiency. Students will learn energy auditing and report writing with improvement recommendations including cost analysis. Each semester will cover a specific topic such as "process heating and refrigeration" or " motors and air compressors". As topics change by semester, prerequisites may be only a subset of those listed. Contact instructor for details.
Prereq: ((ENGR 320 or ME 322) and ENGR 240) or permission .

BE 421 Image Processing and Computer Vision
3 credits
Joint-listed with BE 521
Fundamentals of digital image processing, analysis, feature recognition, and computer vision applied to areas of Biological Engineering including agricultural, environmental and biomedical applications. This course covers camera model, digital image processing and image analysis techniques for computer vision. Additional project components required for graduate credit.
Prereq: (BE 242 and MATH 275) or permission .

BE 422 Tissue Biomechanics
3 credits
Joint-listed with BE 522
This course explores the structure and mechanical properties of hard and soft tissues. The main focus will be on musculoskeletal tissues and may include topics in bone, skin, cartilage, muscle, tendon and ligament. Structure-function relationships at a range of anatomical levels, from the cell to the whole tissue, will be examined. Journal articles will be used to discuss current research in tissue biomechanics. Additional projects/assignments are required for graduate credit. Recommended Preparation: Mechanics of Materials
Prereq: Junior or Senior standing; or Instructor Permission .

BE 423 Tissue Engineering and Regenerative Medicine
3 credits
Joint-listed with BE 523
This course explores the principles, strategies, and tools used in the field of tissue engineering and regenerative medicine. Topics may include the application of biomaterials, stem cells, and bioreactors for restoring, maintaining and improving tissue function. Journal articles will be used to discuss current research in tissue engineering and regenerative medicine. Additional projects/assignments are required for graduate credit.
Prereq: Junior or Senior standing or permission of instructor.

BE 425 Introduction to Biomedical Engineering
3 credits
Principles of biomedical engineering, including biomechanics, biomaterials, nano-osseointegration, tissue engineering, cardiovascular systems and artificial hearts, medical imaging, and a brief survey of biosensors and bio-signaling.
Prereq: Junior or Senior standing in the College of Engineering or the College of Science; or Permission of instructor.

BE 426 Medical Imaging Techniques and Applications
3 credits
Joint-listed with BE 526
This course studies the physical and mathematical principles of diagnostic medical imaging systems and may include: X-ray, CT, nuclear medicine (PET and SPECT), ultrasound, MRI, and others. Applications of imaging techniques will be discussed with respect to medical uses. Basic principles of image processing will be discussed and applied using computer programming software. Additional work is required for graduate credit.
Prereq: MATH 275, PHYS 212, Junior or Senior standing or permission of instructor. Math 310 recommended but not required.

BE 433 Bioremediation
3 credits
Joint-listed with BE 533
Theory and practice of bioremediation as applied to toxic and hazardous wastes, including reaction kinetics, reaction stoichiometry, microbiology, and design of ex- and in-situ processes. Graduate credit requires additional design project. One-two field trips.
Prereq: BIOL 115, BIOL 115L, and MATH 170, or Permission.

BE 441 Instrumentation and Measurements
3 credits
Joint-listed with BE 541
Sensing elements, signal conditioning, data output and control. Additional projects/assignments reqd for grad cr. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.
Prereq: ENGR 240
Coreq: STAT 301.

BE 450 Environmental Hydrology
3 credits
Carries no credit after BE 355 or CE 325. The objective of this course is to provide a comprehensive understanding of the hydrologic processes associated with the environmental processes. Includes components of the hydrologic cycle, analysis of precipitation and run off, evapotranspiration, routing, peak flow, infiltration, soil and water relationships, snowmelt, and frequency analysis. (Spring only)
Prereq: MATH 170.

BE 452 Environmental Water Quality
3 credits
Joint-listed with BE 552
Engineering design to monitor, evaluate, and minimize non-point pollution from agriculture, environmentally acceptable disposal of wastes, bioremediation. Graduate credit requires an additional project and report. Two lectures and one 3-hour lab a week.
Prereq: BE 355 and CHEM 112, CHEM 112L; and SOIL 205 or BIOL 250.

BE 453 Northwest Climate and Water Resources Change
3 credits
Joint-listed with BE 553
Examines the relationship between climate and water resources in the Northwest, including historical and potential changes, and comparisons with other US regions. Scientific literature is read and discussed. Quantitative tools are developed for modeling the process physics and conducting statistical analyses. Historical data are analyzed. Additional project components required for graduate credit.
Prereq: STAT 301 or permission .

BE 459 Irrigation System Design
3 credits
Crop water requirements, irrigation scheduling and water management, selection and design of irrigation systems, pump selection. Two lectures and one 3-hour lab a week; one 1-day field trip.
Prereq: ENGR 335.

BE 461 Bioprocess Engineering
3 credits
Joint-listed with BE 561
This course covers advanced applications of biological sciences, processing principles applied to the analysis and design of handling, processing, and separation of bioproducts. Students complete several hands-on laboratory modules, in addition to a bioprocess design project. Additional work is required for graduate credit.
Prereq: Permission.

BE 462 Electric Power and Controls
3 credits
Design, selection, and use of electrical equipment and electric power systems for application to biological systems; design and use of electrical, electronic, and other feedback control systems for use with biological systems. Course includes advanced biological sciences applications. Two lectures and one 3-hour lab a week.
Prereq: ENGR 240
Coreq: MATH 310.

BE 478 Engineering Design I
3 credits
Gen Ed: Senior Experience
The capstone design sequence for biological and agricultural engineering majors. Course topics include research, design, experimental methods, specifications, prototyping, and verification; report writing, documentation and oral presentations. Topics, from industrial sponsorship, are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints including environmental concerns, sustainability, ethical, safety, manufacturability, social and political considerations.
Prereq: BE 242, ENGR 320, ENGR 335, and ENGR 350 .

BE 479 Engineering Design II
3 credits
Gen Ed: Senior Experience
Continuation of the capstone design sequence for biological and agricultural engineering majors. Course topics include research, design, experimental methods, specifications, prototyping, and verification; report writing, documentation and oral presentations. Topics, from industrial sponsorship, are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints including environmental concerns, sustainability, ethical, safety, manufacturability, social and political considerations
Prereq: BE 478.

BE 485 Fundamentals of Bioenergy and Bioproducts
3 credits
Joint-listed with BE 585
Review of current technology for producing energy and products from biological materials. Discussion of economic, social, and political aspects and future prospects for petroleum displacement. Additional projects/assignments required for graduate credit. Recommended Preparation: Organic Chemistry.
Prereq: CHEM 111, CHEM 111L
Coreq: ENGR 320 or Permission .

BE 491 Senior Seminar
1 credit
Gen Ed: Senior Experience
Professional aspects of the field, employment opportunities and preparation of occupational inventories. Graded P/F.
Prereq: Senior standing.

BE 492 Biofuels
3 credits
Joint-listed with BE 592
Basic principles for the production and utilization of biobased fuels; processing techniques and chemistry; fuel properties and utilization. Additional projects/assignments required for graduate credit. Recommended Preparation: Organic Chemistry.
Prereq: CHEM 111, CHEM 111L
Coreq: ENGR 320 or Permission.

BE 494 Thermochemical Technologies for Biomass Conversion
3 credits
Joint-listed with BE 594
Introduce the fundamentals of biomass conversion technologies for biofuels and bioenergy. Specific topics include biomass preparation/pretreatment, pyrolysis, gasification, direct liquefaction, and economic factors in thermochemical conversion of biomass. Advances of the technologies will be brought to current through literature reviews. A semester long course project is required if taken as a graduate level course. Recommended Preparation: Organic Chemistry, Chemical Reaction Engineering, Engineering Thermodynamics.
Prereq: CHEM 277 and CHEM 278
Coreq: ENGR 320 or Permission.

BE 499 (s) Directed Study
Credit arranged.

BE 500 Master's Research and Thesis
Credit arranged.

BE 501 (s) Seminar
Credit arranged
Graded P/F.
Prereq: Permission.

BE 502 (s) Directed Study
Credit arranged.

BE 504 (s) Special Topics
Credit arranged.

BE 521 Image Processing and Computer Vision
3 credits
Joint-listed with BE 421
Fundamentals of digital image processing, analysis, feature recognition, and computer vision applied to areas of Biological Engineering including agricultural, environmental and biomedical applications. This course covers camera model, digital image processing and image analysis techniques for computer vision. Additional project components required for graduate credit.
Prereq: (BE 242 and MATH 275) or permission .

BE 522 Tissue Biomechanics
3 credits
Joint-listed with BE 422
This course explores the structure and mechanical properties of hard and soft tissues. The main focus will be on musculoskeletal tissues and may include topics in bone, skin, cartilage, muscle, tendon and ligament. Structure-function relationships at a range of anatomical levels, from the cell to the whole tissue, will be examined. Journal articles will be used to discuss current research in tissue biomechanics. Additional projects/assignments are required for graduate credit. Recommended Preparation: Mechanics of Materials .

BE 523 Tissue Engineering and Regenerative Medicine
3 credits
Joint-listed with BE 423
This course explores the principles, strategies, and tools used in the field of tissue engineering and regenerative medicine. Topics may include the application of biomaterials, stem cells, and bioreactors for restoring, maintaining and improving tissue function. Journal articles will be used to discuss current research in tissue engineering and regenerative medicine. Additional projects/assignments are required for graduate credit.

BE 526 Medical Imaging Techniques and Applications
3 credits
Joint-listed with BE 426
This course studies the physical and mathematical principles of diagnostic medical imaging systems and may include: X-ray, CT, nuclear medicine (PET and SPECT), ultrasound, MRI, and others. Applications of imaging techniques will be discussed with respect to medical uses. Basic principles of image processing will be discussed and applied using computer programming software. Additional work is required for graduate credit.
Prereq: MATH 275, PHYS 212, Junior or Senior standing or permission of instructor. Math 310 recommended but not required.

BE 533 Bioremediation
3 credits
Joint-listed with BE 433
Theory and practice of bioremediation as applied to toxic and hazardous wastes, including reaction kinetics, reaction stoichiometry, microbiology, and design of ex- and in-situ processes. Graduate credit requires additional design project. One-two field trips.
Prereq: BIOL 115, BIOL 115L and MATH 170, or Permission.

BE 541 Instrumentation and Measurements
3 credits
Joint-listed with BE 441
Sensing elements, signal conditioning, data output and control. Additional projects/assignments reqd for grad cr. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.
Prereq: ENGR 240
Coreq: STAT 301.

BE 551 Advanced Hydrology
3 credits
Principles of the hydrologic cycle including precipitation, lower atmosphere, evaporation, fluid mechanics of free surface flow, overland flow, stream flow routing, water transport in porous media, infiltration, groundwater outflow and base flow, stream flow generation, and elements of frequency analysis in hydrology.
Prereq: BE 355; or BE 450 and MATH 310; or Permission.

BE 552 Environmental Water Quality
3 credits
Joint-listed with BE 452
Engineering design to monitor, evaluate, and minimize non-point pollution from agriculture, environmentally acceptable disposal of wastes, bioremediation. Graduate credit requires an additional project and report. Two lectures and one 3-hour lab a week.
Prereq: BE 355 and CHEM 112, CHEM 112L; and SOIL 205 or BIOL 250.

BE 553 Northwest Climate and Water Resources Change
3 credits
Joint-listed with BE 453
Examines the relationship between climate and water resources in the Northwest, including historical and potential changes, and comparisons with other US regions. Scientific literature is read and discussed. Quantitative tools are developed for modeling the process physics and conducting statistical analyses. Historical data are analyzed. Additional project components required for graduate credit.
Prereq: STAT 301 or permission .

BE 558 Fluid Mechanics of Porous Materials
3 credits
Statics and dynamics of multiflow systems in porous materials; properties of porous materials; steady and unsteady flow. Cooperative: open to WSU degree-seeking students.

BE 561 Bioprocess Engineering
3 credits
Joint-listed with BE 461
This course covers advanced applications of biological sciences, processing principles applied to the analysis and design of handling, processing, and separation of biomaterials. Students complete several hands-on laboratory modules, in addition to a bioprocess design project. Additional work is required for graduate credit.
Prereq: Permission .

BE 585 Fundamentals of Bioenergy and Bioproducts
3 credits
Joint-listed with BE 485
Review of current technology for producing energy and products from biological materials. Discussion of economic, social, and political aspects and future prospects for petroleum displacement. Additional projects/assignments required for graduate credit. Recommended Preparation: Organic Chemistry.
Prereq: CHEM 111, CHEM 111L
Coreq: ENGR 320 or Permission.

BE 592 Biofuels
3 credits
Joint-listed with BE 492
Basic principles for the production and utilization of biobased fuels; processing techniques and chemistry; fuel properties and utilization. Additional projects/assignments required for graduate credit. Recommended Preparation: Organic Chemistry.
Prereq: CHEM 111, CHEM 111L
Coreq: ENGR 320 or Permission.

BE 594 Thermochemical Technologies for Biomass Conversion
3 credits
Joint-listed with BE 494
Introduce the fundamentals of biomass conversion technologies for biofuels and bioenergy. Specific topics include biomass preparation/pretreatment, pyrolysis, gasification, direct liquefaction, and economic factors in thermochemical conversion of biomass. Advances of the technologies will be brought to current through literature reviews. A semester long course project is required if taken as a graduate level course. Recommended Preparation: Organic Chemistry, Chemical Reaction Engineering, Engineering Thermodynamics.
Prereq: CHEM 277 and CHEM 278
Coreq: ENGR 320 or Permission.

BE 598 (s) Internship
Credit arranged.

BE 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

BE 600 Doctoral Research and Dissertation
Credit arranged.

BIOLOGY (BIOL)

BIOL 101 Perspectives in Biology
1 credit
Open only to majors. Intro to the disciplines in the fields of biology; current research topics.

BIOL 102 Biology and Society
3 credits
Gen Ed: Natural and Applied Sciences
Not open to majors or for minor cr. Principles of biology and their relationship to social issues. Three lecture and one 3-hour lab a week.

BIOL 102L Biology and Society Lab
1 credit
Gen Ed: Natural and Applied Sciences
Not open to Biology majors or for minor credit. Principles of biology and their relationship to social issues. Three lectures and one 3-hour lab a week.

BIOL 114 Organisms and Environments
4 credits
Gen Ed: Natural and Applied Sciences
The evolution of diversity, the biology of plants and animals, and their environments. Three lectures and one 3-hour lab a week.

BIOL 115 Cells & the Evolution of Life
3 credits
Gen Ed: Natural and Applied Sciences
The cell, heredity and evolutionary processes.
Prereq or Coreq: CHEM 101 and CHEM 101L or CHEM 111 and CHEM 111L.

BIOL 115L Cells and the Evolution of Life Laboratory
1 credit
Gen Ed: Natural and Applied Sciences
Laboratory for introductory biology; experiments are designed to teach problem solving, scientific methods and the aspects of biology related to the cell.
Coreq or Prereq: BIOL 115 .

BIOL 120 Human Anatomy
4 credits
Study of the anatomy of the major organ systems of the human body; lab consists of studying human gross anatomy models and prosected cadavers. Three lec and one 3-hr lab a wk. (Fall only)

BIOL 121 Human Physiology
4 credits
Study of the physiology of the major organ systems of the human body. Three lectures and one 3-hour lab a week. (Spring only)
Prereq: BIOL 120.

BIOL 151 Intro to Health Professions
1 credit
This course is primarily for first- and second-year students, but all students interested in healthcare careers are welcome. The primary content of this course is centered on a series of presentations by guests from a variety of health professions, ranging from occupational therapy to dentistry. Students will learn about the presenters' educational process and personal journey to become a professional in their chosen field, as well as the responsibilities, professional interactions, joys, and challenges of working in that field. Discussions and assignments are designed to broaden the perspective of the healthcare field for the student, and to begin preparing them to be successful applicants in their chosen field. This is a dynamic course and the content varies from one year to the next due to the availability of guest speakers and number of students registered.

BIOL 154 Introductory Microbiology
3 credits
Gen Ed: Natural and Applied Sciences
Carries no credit after BIOL 250. May be taken by microbiology majors, but carries no credit after BIOL 250. Introduction to microorganisms and their role in disease, health, foods, and the environment; current topics in microbiology. (Spring only)

BIOL 155 Introductory Microbiology Laboratory
1 credits
Gen Ed: Natural and Applied Sciences
May be taken by microbiology majors but carries no credit after BIOL 255. Introductory laboratory training in basic microbiology; includes sterile technique, bacterial enumeration methods, culturing techniques, yogurt preparation and analysis, recombinant DNA techniques. Three hrs lab a wk. (Spring only)
Coreq: BIOL 154 .

BIOL 204 (s) Special Topics
Credit arranged.

BIOL 213 Principles of Biological Structure and Function
4 credits
Principles of physiology in plants and animals (homeostasis, hormonal and neural control systems, organismal physiology). Three lectures and one 3-hour lab a week. (Spring only)
Prereq: BIOL 114 or BIOL 115 and BIOL 115L.

BIOL 250 General Microbiology
3 credits
Gen Ed: Natural and Applied Sciences
Introduction to nature and activity of bacteria and other microorganisms; their importance in all life systems. Three hours of lecture per week. (Fall only)
Prereq: BIOL 115, BIOL 115L and either CHEM 101 and CHEM 101L or CHEM 111 and CHEM 111L.

BIOL 255 General Microbiology Lab
2 credits
Gen Ed: Natural and Applied Sciences
Training in the handling of microscopes, basic lab equipment, and manipulation of microbes. Two 2-hour labs per week.
Prereq or **Coreq:** BIOL 250 .

BIOL 299 (s) Directed Study
Credit arranged.

BIOL 300 Survey of Biochemistry
3 credits
Carries no credit after BIOL 380. Survey of biochemical principles and the molecular structure and function that describe the chemical basis of life. (Fall only)
Prereq: CHEM 101 and CHEM 101L or CHEM 111 and CHEM 111L
Coreq: CHEM 275 or CHEM 277 .

BIOL 301 Undergraduate Research
1-4 credits, max 8
Undergraduate research for students without senior standing.
Pereq: Permission.

BIOL 310 Genetics
3 credits
Genetic mechanisms in animals, plants, and microorganisms. Three hours of lec per. (Fall only)
Prereq: BIOL 115 and BIOL 115L or BIOL 250 .

BIOL 312 Molecular and Cellular Biology
3 credits
Current theory and experimental basis of the structure/function of eukaryotic cells. Topics include plasma membrane, organelles, cytoskeleton and cell mobility, the nature of genes, gene expression, DNA replication and cellular reproduction, and signal transduction. Three lectures and one 1-hour recitation a wee. (Spring only)
Prereq: BIOL 115, BIOL 115L .

BIOL 313 Molecular and Cellular Laboratory
1 credit
Laboratory experiments and techniques related to molecular and cellular biology. One 3-hour lab per week. (Spring only)
Coreq: BIOL 312 .

BIOL 314 Ecology and Population Biology
4 credits
Population genetics, population ecology, species interactions, community ecology, biodiversity, and data analysis. Three lectures and one 3-hour lab per week. (Spring only)
Prereq: BIOL 114 and BIOL 115, BIOL 115L; STAT 251 or STAT 301; and MATH 160 or MATH 170.

BIOL 315 Genetics Lab
1 credit
Laboratory on genetic mechanisms in animals, plants, and microorganisms. One three hour lab per week. (Fall only)
Prereq: BIOL 115 or BIOL 250
Coreq: BIOL 310 .

BIOL 324 Comparative Vertebrate Anatomy
4 credits
Evolution of vertebrates and their organ systems with an emphasis on structure – function relationships. Two lectures and two 3-hour labs a week. (Spring only, alt/yrs)
Prereq: BIOL 114 and BIOL 115, BIOL 115L and BIOL 213; or Permission .

BIOL 380 Biochemistry I
4 credits
Carries one credit after Biol 300. Introduction to the structure and function of major molecular constituents of living systems. Emphasis on proteins, enzyme kinetics and catalysis, carbohydrate metabolism. Three hrs lecture and one hr with interactive problem solving. (Fall only)
Prereq: CHEM 112, CHEM 112L and CHEM 277 .

BIOL 382 Biochemistry I Laboratory
2 credits
Lab training in modern methods. One 3-hour lab and one 1-hour recitation a week. (Fall only)
Coreq: BIOL 380 or equivalent .

BIOL 398 (s) Internship
1-3 credits, max 3
Supervised internship in professional biological, non-university settings, integrating academic study with work experience; requires formal written plan of activities to be approved by academic advisor and department chair before engaging in the work; a final written report will be evaluated by on-campus faculty. Graded P/F.
Prereq: Permission.

BIOL 400 (s) Seminar
1 credit, max arranged
May be used as a science elective after 1 required credit, up to a maximum of 4 credits. Graded P/F.

BIOL 401 Undergraduate Research
1-4 credits, max 8
Gen Ed: Senior Experience
Undergraduate research at the senior level.
Prereq: Senior Standing and Permission of Instructor .

BIOL 403 (s) Workshop
Credit arranged.

BIOL 404 (s) Special Topics
Credit arranged.

BIOL 405 Practicum in Anatomy Laboratory Teaching
2-4 credits, max 8
Gen Ed: Senior Experience
Organization, preparation, and teaching of anatomy laboratory objectives under faculty supervision. (Fall only)
Prereq: Permission.

BIOL 407 Practicum in Biology Laboratory Teaching
2-6 credits, max 12
Gen Ed: Senior Experience
Organization, preparation, and teaching of lab experiments or demonstrations under faculty supervision.
Prereq: Any four of the following courses: BIOL 114, BIOL 115, BIOL 213, BIOL 310, BIOL 312, or BIOL 314; and Permission .

BIOL 408 Practicum in Human Physiology Laboratory Teaching
2-4 credits, max 8
Gen Ed: Senior Experience
Organization, preparation, and teaching of human physiology laboratory objectives under faculty supervision. (Spring only)
Prereq: BIOL 121 and Permission .

BIOL 411 Senior Capstone
2 credits
Gen Ed: Senior Experience
Application of biological principles and information to the analysis of societal and philosophical issues. (Spring only)
Prereq: BIOL 213 or BIOL250, BIOL 310, BIOL 312, BIOL 314 or BIOL 380, and Senior standing.

BIOL 416 Plant Diversity and Evolution
4 credits
Origin, evolution, and diversity of major land plant groups; emphasis on systematics, anatomy, morphology, ecological diversity, and macroevolution. Two lectures and one 3-hour lab a week; one field trip. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: BIOL 114 and BIOL 115, BIOL 115L.

BIOL 421 Advanced Evolution/Population Dynamics
3 credits
Scientific understanding of the processes of evolution, the history of life on earth, and application of evolutionary principles across fields in biology. (Spring only)
Prereq: BIOL 310 or BIOL 314 or FOR 221 or REM 221 or WLF 220.

BIOL 425 Special Topics: Experimental Field Ecology
3 credits
Intensive course on diverse aspects of field ecology to be held off-campus. Various global locations (i.e. Costa Rica, Oregon coast, Hawaii) are possible. The course will be scheduled during an 8-10 day period preceding/following the Spring Term (i.e. January or May). Will involve travel and lodging costs at student expense.
Prereq: BIOL 114, BIOL 115, BIOL 213, BIOL 310, BIOL 312, and BIOL 314.

BIOL 426 Systems Biology
3 credits
Joint-listed with BIOL 526
Two lectures per week. Systems Biology will use quantitative approaches including theory and computation to understand the complex function that emerges from physiological systems. Topics will include transcriptional networks and their common motifs, robustness in chemotaxis and development, noise and variability, evolution of modularity, and optimality in metabolism. Cooperative: open to WSU degree-seeking students. (Fall only, alt/yrs).
Prereq: BIOL 115, BIOL 115L and MATH 170 or permission of instructor .

BIOL 428 Microscopic Anatomy
4 credits
Basic principles of histology and advanced microscopic anatomy of vertebrate tissues and organs. (Fall, alt/even yrs)
Prereq: BIOL 213 or BIOL 312 .

BIOL 432 Immunology
3 credits
Theory and mechanisms of the cellular basis of immune response; antibody structure, function, and synthesis; cell-mediated immunity; complement; hypersensitivity; immunologic diseases; transplantation; tumor immunity. Extra oral and/or written assignments required for graduate credit. (Spring only)
Prereq: BIOL 300 or BIOL 380 .

BIOL 433 Pathogenic Microbiology
3 credits
Epidemiology, host-parasite relationships, pathology, host response; treatment, prevention, and control of pathogenic microorganisms. Extra oral and/or written assignments required for graduate credit. (Fall, alt/odd years)
Prereq: BIOL 250 .

BIOL 444 Genomics
3 credits
Structural, functional, and comparative genomics of animals, plants, fungi, and microbes. Case studies illustrating a genomic approach to questions of fundamental biological and societal relevance will be drawn from diverse fields such as human medicine, evolutionary biology, agriculture, and bioterrorism. (Spring, alt/yrs)
Prereq: BIOL 114 and BIOL 310; or BIOL 250.

BIOL 447 Virology
3 credits
Joint-listed with BIOL 547
A survey of virology, with special emphasis on the molecular basis of replication, host-pathogen interactions and diseases associated with animal viruses. Extra oral and/or written assignments required for grad credit. Recommended preparation: BIOL 250. (Fall, alt/yrs)
Prereq: BIOL 312 or Permission .

BIOL 454 Biochemistry II
3 credits
Joint-listed with BIOL 554
Intermediate biochemistry; areas of emphasis include molecular biology, nitrogen and lipid metabolism. Extra oral and/or written assignments required for grad credit. (Spring only)
Prereq: CHEM 372; BIOL 380 or CHEM 302 or 306; or Permission.

BIOL 456 Computer Skills for Biologists
3 credits
Joint-listed with BIOL 549
Management and analysis of complicated datasets such as those in molecular evolution, systematics, and genomics. Demonstrations, exercises, and student projects to teach advanced Unix skills, programming (e.g. Perl and R), and data management. Cooperative: open to WSU degree-seeking students. (Fall, alt/even yrs)
Prereq: BIOL 310 and STAT 251 or STAT 301; or Permission .

BIOL 460 Advanced Field Botany
3 credits
Joint-listed with BIOL 560
Hands-on training in field botany as applied to evolutionary, ecological, and floristic studies; two-week field course in the Inland Northwest. Additional projects/assignments required for grad credit. (Summer only)
Prereq: Instructor Permission.

BIOL 461 Neurobiology
3 credits
Joint-listed with BIOL 565
Study of the nervous system, with an emphasis on mechanisms of neuronal signaling, the function of sensory and motorsystems, and neural development. Recommended: PHYS 111, PHYS 112, and CHEM 275 or CHEM 277. Cooperative: open to WSU degree-seeking students. (Fall, Alt/yrs)
Prereq: BIOL 213, BIOL 310, BIOL 312, GENE 314, BIOL 300, or BIOL 380 .

BIOL 474 Developmental Biology
3 credits
Joint-listed with BIOL 573
Embryology of model organisms, mechanisms of developmental processes, reproductive biology, stem cells, growth, and tissue regeneration. Additional projects/assignments required for graduate credit. (Fall, Alt/yrs)
Prereq: BIOL 310 or BIOL 312.

BIOL 478 Animal Behavior
3 credits
Evolution, causation, development, and function of behavior in vertebrates and invertebrates. (Spring only)
Prereq: BIOL 114 and BIOL 115, BIOL 115L.

BIOL 482 Protein Structure and Function
3 credits
Joint-listed with BIOL 582
Detailed analysis of protein structure and function including enzyme activity, binding, folding and stability, and techniques for structure determination. Additional projects/assignments required for graduate credit. (Fall, alt/yrs)
Prereq for 482: BIOL 380 .

BIOL 483 Mammalogy
3 credits
Evolution, systematics, distribution, and biology of mammals. Two lectures and one 3-hour lab a week; one field trip. (Fall only)
Prereq: BIOL 114 and BIOL 115, BIOL 115L.

BIOL 484 Invertebrate Zoology
4 credits
Morphology of freshwater, marine, and terrestrial invertebrates and phylogeny of major groups. Three lectures and one 3-hour lab a wk. One required, weekend field trip. (Fall only)
Prereq: BIOL 114 and BIOL 115, BIOL 115L.

BIOL 485 Prokaryotic Molecular Biology
3 credits
Joint-listed with BIOL 585
Current theory and experimental basis for prokaryotic DNA, RNA, and protein synthesis, gene regulation and cell wall metabolism. Extra oral and/or written assignments required for graduate credit. (Spring only)
Prereq: BIOL 250 and BIOL 380 .

BIOL 487 Eukaryotic Molecular Genetics
3 credits
Joint-listed with BIOL 587
Molecular basis of genetics in eukaryotes. Extra oral and/or written assignments required for graduate credit. Recommended preparation: BIOL J485/J585 and PLSC J488/J588. (Fall only)
Prereq: BIOL 380; and BIOL 310 or GENE 314 .

BIOL 489 Herpetology
4 credits
Evolution, systematics, physiology, and ecology of reptiles and amphibians. Three lectures and one 3-hr lab a wk; field trip. (Fall only)
Prereq: BIOL 114 and BIOL 115, BIOL 115L .

BIOL 491 Practicum in Teaching
2 credits
Gen Ed: Senior Experience
Teaching by advanced students under faculty supervision.
Prereq: Permission .

BIOL 499 (s) Directed Study
Credit arranged.

BIOL 500 Master's Research and Thesis
Credit arranged.

BIOL 501 (s) Seminar
Credit arranged.

BIOL 502 (s) Directed Study
Credit arranged.

BIOL 503 (s) Workshop
Credit arranged.

BIOL 504 (s) Special Topics
Credit arranged.

BIOL 505 Colloquium
1 credit
Oral presentation required for credi. Graded P/F.
Prereq: Permission.

BIOL 508 Topics in Neuroscience
1 credit, max arranged
Seminars and discussion of current topics in neuroscience.
Prereq: Graduate standing.

BIOL 521 Graduate Teaching Practicum
3 credits
Organization, preparation, and teaching of lab experiments or demonstrations under faculty supervision. Graded pass/fail.
Prereq: Graduate standing and Permission.

BIOL 522 Molecular Evolution
3 credits
Understanding evolutionary processes and patterns at the molecular level, techniques for using genetic and genomic data understand evolutionary history of organisms, 3 lectures per week. Cooperative: open to WSU degree-seeking students. (Fall, alt/yrs)
Prereq: Undergraduates require permission of instructor .

BIOL 524 Research & Curriculum Progress
1 credit, max arranged
Required of all graduate students one semester per year. The grade is based on preparation of an oral and written presentation of research goals and coursework for the completion of the degree. A letter grade is assigned by committee members at the time of the student's graduate committee meeting. Recommended preparation: Undergraduate degree in Microbiology, Biochemistry, or related topic.
Prereq: Permission .

BIOL 526 Systems Biology
3 credits
Joint-listed with BIOL 426
Two lectures per week. Systems Biology will use quantitative approaches including theory and computation to understand the complex function that emerges from physiological systems. Topics will include transcriptional networks and their common motifs, robustness in chemotaxis and development, noise and variability, evolution of modularity, and optimality in metabolism. Cooperative: open to WSU degree-seeking students. (Fall only, alt/yrs).
Prereq: BIOL 115, BIOL 115L and MATH 170 or permission of instructor.

BIOL 536 Phylogenetics Reading Group
1 credit, max arranged
Review recent articles in phylogenetics and systematics journals. Students choose, critically review, and discuss the articles to develop critical-thinking skills and confidence in their knowledge of the literature. Graded P/F. Cooperative: open to WSU degree-seeking students.

BIOL 545 Principles of Systematic Biology
3 credit
The inference of evolutionary trees (phylogeny) and the processes that generate biodiversity from analyses of morphological, molecular, and behavioral data; uses of phylogenies in testing evolutionary and other hypotheses at both inter and intraspecific levels. Two hours of lecture and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yrs)
Prereq: PLSC 205 or BIOL 213 and BIOL 310 .

BIOL 547 Virology
3 credits
Joint-listed with BIOL 447
A survey of virology, with special emphasis on the molecular basis of replication, host-pathogen interactions and diseases associated with animal viruses. Extra oral and/or written assignments required for grad credit. Recommended preparation: BIOL 250. (Fall, alt/yrs)
Prereq: BIOL 312 or Permission .

BIOL 548 Evolutionary Ecology
3 credits
This course develops the theoretical underpinnings for the field of evolutionary ecology and illustrates how this conceptual basis is used to address major questions of social and economic importance such as the spread of invasive species and the evolution of infectious disease. Cooperative: open to WSU degree-seeking students. (Spring, alt/yrs)

BIOL 549 Computer Skills for Biologists
3 credits
Joint-listed with BIOL 456
Management and analysis of complicated datasets such as those in molecular evolution, systematics, and genomics. Demonstrations, exercises, and student projects to teach advanced Unix skills, programming (e.g. Perl and R), and data management. Cooperative: open to WSU degree-seeking students. (Fall, alt/even yrs)
Prereq: BIOL 310 and STAT 251 or STAT 301; or Permission .

BIOL 551 Seminar on Reproductive Biology
1 credit, max 5
Current topics in reproductive biology. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: Graduate standing .

BIOL 552 Professional Development for Biologists
3 credits
Oral and written presentation skills for communicating scientific information, including grant writing and data presentation for manuscripts and seminars.
Prereq: Graduate standing .

BIOL 553 Ethical Issues in Biological Research
1 credit
Practical ethical issues for biologists.
Prereq: Graduate standing .

BIOL 554 Biochemistry II
3 credits
Joint-listed with BIOL 454
Intermediate biochemistry; areas of emphasis include molecular biology, nitrogen and lipid metabolism. Extra oral and/or written assignments required for grad credit. (Spring only)
Prereq: CHEM 372; BIOL 380 or CHEM 302 or CHEM 306; or Permission.

BIOL 560 Advanced Field Botany
3 credits
Joint-listed with BIOL 460
Hands-on training in field botany as applied to evolutionary, ecological, and floristic studies; two-week field course in the Inland Northwest. Additional projects/assignments required for grad credit. (Summer only)
Prereq: Instructor Permission.

BIOL 563 Mathematical Genetics
3 credits
Cross-listed with MATH 563 Investigation of aspects of evolutionary biology with an emphasis on stochastic models and statistical methods; topics include: diffusion methods in molecular evolution, gene genealogies and the coalescent, inferring coalescent times from DNA sequences, population subdivision and F statistics, likelihood methods for phylogenic inference, statistical hypothesis testing, the parametric bootstrap. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 160 or MATH 170 and STAT 251 or STAT 301 .

BIOL 565 Neurobiology
3 credits
Joint-listed with BIOL 461
Study of the nervous system, with an emphasis on mechanisms of neuronal signaling, the function of sensory and motorsystems, and neural development. Recommended: PHYS 111, PHYS 112, and CHEM 275 or CHEM 277. Cooperative: open to WSU degree-seeking students. (Fall, Alt/yrs)
Prereq: BIOL 213, BIOL 310, BIOL 312, GENE 314, BIOL 300, or BIOL 380 .

BIOL 573 Developmental Biology
3 credits
Joint-listed with BIOL 474.
Embryology of model organisms, mechanisms of developmental processes, reproductive biology, stem cells, growth, and tissue regeneration. Additional projects/assignments required for graduate credit. (Fall, Alt/yrs)
Prereq: BIOL 310 or BIOL 312 .

BIOL 582 Protein Structure and Function
3 credits
Joint-listed with BIOL 482
Detailed analysis of protein structure and function including enzyme activity, binding, folding and stability, and techniques for structure determination. Additional projects/assignments required for graduate credit. (Fall, alt/yrs)
Prereq for 482: BIOL 380 .

BIOL 585 Prokaryotic Molecular Biology
3 credits
Joint-listed with BIOL 485
Current theory and experimental basis for prokaryotic DNA, RNA, and protein synthesis, gene regulation and cell wall metabolism. Extra oral and/or written assignments required for graduate credit. (Spring only)
Prereq: BIOL 250 and BIOL 380.

BIOL 587 Eukaryotic Molecular Genetics
3 credits
Joint-listed with BIOL 487
Molecular basis of genetics in eukaryotes. Extra oral and/or written assignments required for graduate credit. Recommended preparation: BIOL 485/BIOL 585 and PLSC 488/PLSC 588. (Fall only)
Prereq: BIOL 380; and BIOL 310 or GENE 314 .

BIOL 598 (s) Internship
Credit arranged.

BIOL 599 (s) Non-thesis Master's Research
Credit arranged.

BIOL 600 Doctoral Research and Dissertation
Credit arranged.

BIOREGIONAL PLAN & COMM DESIGN (BIOP)

BIOP 404 (s) Special Topics
Credit arranged.

BIOP 423 Planning Sustainable Places
3 credits
Joint-listed with BIOP 523
This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit.

BIOP 500 Master's Research and Thesis
Credit arranged.

BIOP 501 (s) Seminar
Credit arranged.

BIOP 502 (s) Directed Study
Credit arranged.

BIOP 503 (s) Workshop
Credit arranged.

BIOP 504 (s) Special Topics
Credit arranged.

BIOP 520 Introduction to Bioregional Planning
3 credits
This class introduces students to bioregional planning concepts and shows the difference between "traditional' planning and bioregional planning, and explores the relevance of "traditional" planning and bioregional planning for communities in the American West.

BIOP 521 Local and Regional Comprehensive Planning
3 credits
Provides an overview of the processes and methods for preparing comprehensive plans for local and county governments in the context of federal and state lands and regional growth management: Integrates land-use with economic development, housing, historic preservation, agricultural viability. Includes lectures by practitioners and interdisciplinary faculty, and a service-learning project. (Fall only)

BIOP 522 Bioregional Planning Methods
3 credits
This is an overview course of the methods used in making evidence based decisions in regional planning. This course covers the most common ways that planners collect and analyze data. The course specifically focuses on the challenges of the collection, analysis and evaluation of data within the setting of non-metropolitan areas and rural communities.

BIOP 523 Planning Sustainable Places
3 credits
Joint-listed with BIOP 423
This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit.

BIOP 530 Planning Theory and Process
3 credits
Seminar provides a historical and theoretical basis to address the application of knowledge to public and political decisions and the ethics of professional practice within public and non-governmental settings. Readings, discussions, and essays focus on underlying traditions and assumptions, cultural contexts, social justice and "planner" roles.

BIOP 560 Bioregional Planning Studio I
4 credits
Students will work on one or more projects that target the needs of an Idaho community or regional agency. The projects will involve the application of various tools including GIS, comprehensive planning, physical design, economic development, transportation systems or other relevant methods in the creation of products or proposals. In this course, students will learn a variety of skills related to facilitation, negotiation, community politics, conflict management and assessment tools such as social impact or environmental impact assessments. (Spring only)

BIOP 561 Bioregional Planning Studio II
4 credits
This course is intended to allow students to integrate a number of skill sets by choosing a project that builds on their program specialization. Students work with faculty advisors to develop and complete final projects. Students will also have the opportunity to interact with first year students in BIOP 560 at regular intervals throughout the semester to discuss common readings, provide mutual assistance on projects and peer-to-peer evaluation of completed work. (Spring only)
Prereq: BIOP 560 .

BIOP 598 (s) Internship
Credit arranged.

BIOP 599 (s) Non-thesis Master's Research
Credit arranged.

BUSINESS (BUS)

BUS 190 Integrated Business and Value Creation
3 credits
Explores the environment of business and the management of business systems to understand how an organization turns opportunity into value. This course uses an integrated, cross-disciplinary perspective including working in teams. Includes international and ethical issues. May involve evening exams.

BUS 200 (s) Seminar
Credit arranged.

BUS 204 (s) Special Topics
Credit arranged.

BUS 252 Introduction to Business Analytics
3 credits
Introduction to business analytics including modeling and sensitivity analysis. Topics include psychology of problem solving, optimization, decision theory, simulation, regression, and related issues. May involve evening exams.
Prereq: STAT 251 or STAT 301; and MATH 143 or MATH 160 or MATH 170 or MATH 175 or MATH 275 .

BUS 262 Real Estate Finance
3 credits
Analysis of sources and methods used in the financing of real estate property construction, development, and purchase. This course has been certified by the Idaho Real Estate Commission. Recommended Preparation: a course in essentials of real estate.

BUS 263 Real Estate Law
3 credits
Study of Idaho real estate law. This course has been certified by the Idaho Real Estate Commission. Recommended Preparation: a course in essentials of real estate; BLAW 265.

BUS 298 (s) Internship
1 to 3 credits, max6
Student shall complete internship contract in consultation with area internship coordinator prior to enrolling for internship credit. Graded P/F.
Prereq: Major in the Department of Business and Permission.

BUS 299 (s) Directed Study
Credit arranged.

BUS 339 Spreadsheet Modeling
1 credit
The course is focused on developing students' detailed understanding of modeling and managing data in a business environment. Hands-on material is presented in this course making use of spreadsheets to model and manage data.
Coreq: ECON 340 .

BUS 390 (s) Integrated Topics in Business
3 credits, max 6
Each section of the course will offer an in depth study of an integrating topic spanning the business functions. International and ethical issues related to the topic will be explored. May be repeated once with a different topic for credit. See the current course schedule for specific section titles.
Prereq: BLAW 265 and FIN 301 and MKTG 321 and MIS 350 and OM 370 and; ECON 201 or ECON 272.

BUS 398 (s) Internship
1 to 3 credits, max 6
Student shall complete internship contract in consultation with area internship coordinator prior to enrolling for internship credit. Graded P/F.
Prereq: Major in the Department of Business and Permission.

BUS 400 (s) Seminar
Credit arranged.

BUS 404 (s) Special Topics
Credit arranged.

BUS 429 Vandal Solutions
1 to 6 credits, max 6
In this class students learn business by doing business. Students will run a business that provides, for a fee, market research products to clients (both external and internal to the UI). Students will apply concepts learned in the business curriculum such as the selling process, the market research process, integrated marketing communications, marketing and business plans, human resource management, financial management, and cross-functional collaboration. Members of Vandal Solutions decide how profits generated are dispersed with the general guideline being that funds should be used to support student activities such as club activities, field trips, career planning, and scholarships. Recommended Preparation: Junior standing.
Prereq: Permission.

BUS 490 Strategic Management
3 credits
Gen Ed: Senior Experience
Capstone, integrative senior experience course focusing on the formulation and implementation of competitive strategy in both domestic and international contexts. Emphasizes approaches that executives take to provide ethical and strategic leadership to an organization as well as approaches used to achieve alignment of strategy with action across the various functional areas of the business. Application of strategy concepts in practice will be stressed. May involve evening exams.
Prereq: MHR 310, FIN 301, MKTG 321, MIS 350, OM 370; and ENGL 207 or ENGL 208 or ENGL 313 or ENGL 317 or PHIL 201; and senior standing.

BUS 498 (s) Internship
Credit arranged.

BUS 499 (s) Directed Study
Credit arranged.

BUS 502 (s) Directed Study
Credit arranged.

BUS 504 (s) Special Topics
Credit arranged.

BUS 505 (s) Workshop
Credit arranged.

BUS 551 Managing Scientific Projects
3 credits
Study of business principles needed to manage scientific projects with emphasis on accounting, financial, and scheduling concepts. Course topics include revenue and cost analysis, analysis of financial return, assessing project impact on financial statements, budgeting, project scheduling and capacity planning, risk management, and project control.
Prereq: Graduate student in science or engineering discipline .

BUS 552 Management of Scientific Innovation
3 credits
Study of business and economic principles needed to manage scientific innovation with emphasis on strategy, organizational leadership, and marketing concepts. Course topics include the role of innovation in strategy, the development of systems and processes that support innovation, the management of technical teams, the commercialization and regulation of scientific innovation, and the protection of intellectual property.
Prereq: Graduate student in science or engineering discipline .

BUS 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

BUSINESS LAW (BLAW)

BLAW 265 Legal Environment of Business
3 credits
Law and its relationship to society; legal framework of business enterprises; court organization and operation; private property and contracts as basic concepts in a free enterprise system. May involve evening exams.

BLAW 404 (s) Special Topics
Credit arranged.

BLAW 420 Commercial Law
3 credits
Uniform commercial code and law of agency, partnerships, and corporations. May include evening exams.
Prereq: BLAW 265.

BLAW 425 Law of Business Entities
3 credits
Business law related to corporations, partnerships, and limited liability companies with emphasis on applying the law to various business entities and how it might be used in business and personal planning. The case method is used. May include evening exams. (Fall only)

BLAW 504 (s) Special Topics
Credit arranged.

CAREER AND TECHNICAL EDUCATION (CTE)

CTE 130 Introduction to Electricity and Electronics
3 credits
This introduction to electricity and electronics includes properties of resistors, capacitors, and inductors in electrical circuits; basics of power distribution systems and house wiring; and the use of meters and oscilloscopes in lab. Three 1-hr lec and one 2-hr lab a wk.

CTE 200 (s) Seminar
Credit arranged.

CTE 203 (s) Workshop
Credit arranged.

CTE 204 (s) Special Topics
Credit arranged.

CTE 298 (s) Internship
Credit arranged.

CTE 299 (s) Directed Study
Credit arranged.

CTE 306 Preservice for New Career and Technical Teachers
3 credits
Fundamental skills necessary for new teachers in secondary and postsecondary schools to be successful in meeting students.

CTE 310 Lab Safety, Mgnt, & Liability
3 credits
Overview of operations, use, and maintenance of laboratory tools and equipment, laboratory management and liability concerns.

CTE 351 Principles and Philosophy of Career and Technical Education
3 credits
Joint-listed with CTE 551
Overview and interpretation of history, aims, and purposes of public education and professional-technical education; issues and programs comprising professional-technical education in Idaho and in the nation. Additional projects/assignments required for graduate credit.

CTE 353 Manufacturing Systems
3 credits
In-depth examination and implementation of manufacturing theory and processes including research and development, product planning and controlling. Topics, such as Lean Manufacturing, Kanban, relating to manufacturing facilities and management of manufacturing processes will be discussed, studied and implemented in the manufacture of a designed product in quantity.
Prereq: CTE 267 and CTE 310 .

CTE 354 Construction Technology
3 credits Teaching techniques and methods of instruction for a systems approach to construction technology including residential, commercial, and civil. Recommended Preparation: CTE 310.

CTE 370 Transportation & Engineering Technologies
4 credits
Students will explore various forms of renewable energy and transportation systems. They will also work in teams to propose solutions to power, energy and transportation issues. Students will research, design, build and evaluate their potential solutions in a hands-on laboratory environment. Recommended Preparation: MATH 143 and PHYS 111.

CTE 398 (s) Internship
Credit arranged.

CTE 400 (s) Seminar
Credit arranged.

CTE 403 (s) Workshop
Credit arranged
Graded P/F.
Prereq: Permission.

CTE 404 (s) Special Topics
Credit arranged.

CTE 405 (s) Professional Development
Credit arranged
Joint-listed with CTE 505
Credits earned in this course will not be accepted toward grad degree programs. Professional development and enrichment. Additional projects/assignments required for graduate credit.

CTE 410 Technology & Society
3 credits
In-depth examination and implementation of the relationship between technology and social change; previous course work in technology is not essential.

CTE 413 Retail Merchandising for Marketing Education
3 credits
Designed for marketing teacher preparation. Contemporary information and activities that address retail merchandising, including standards and curriculum resources for secondary and two-year technical college courses. Curriculum standards, educational resources, careers, the role of retail, and the operation of a retail business that includes market analysis, store layout, and merchandising. Recommended Preparation: MKTG 321.

CTE 415 Productivity Software in Business Education
3 credits
Advanced computer applications course designed primarily for business teacher education students; includes extensive hands-on experience using word processing, spreadsheet, and database programs used in both industry and business education programs; addresses methodology, curriculum development, and classroom management techniques.

CTE 416 Website Design and Development
3 credits
Basics of html, advanced use of web development applications for purposes of creating effective websites that incorporate accepted design principles, taught in the context of Professional-Technical Education.

CTE 417 Teaching & Learning through STEM Integration
3 credits
Students examine a variety of approaches to teaching and assessment methods for technology educators at the secondary level. Instructional strategies best suited to learning technical skills, related academics, problem solving, and hands-on activities will be explored through the lens of Science, Technology, Engineering, and Mathematics (STEM) integration.
Prereq: EDCI 201 , EDCI 301, and CTE 310 .

CTE 418 Teaching Economics and Personal Finance
3 credits
In-depth examination and implementation of methods and materials for teaching economics and personal finance.
Prereq: ECON 201 or Equivalent.

CTE 419 Database Applications and Information Management
3 credits
Teaching and training strategies for database applications. Includes database management principles and methods of information retrieval, processing, storage and distribution. Advanced project reqd for graduate credit.

CTE 420 Assessment in Contextual Learning Environments
3 credits
Methods of assessing in contextual and hands on learning environments. Includes authentic assessment of project based learning.

CTE 426 Occupational Analysis and Curriculum Development
3 credits
Instructional design systems and curriculum development as a systematic method of designing, carrying out, and evaluating the total process of teaching and learning; based on research in human learning and communication, employing a combination of human and non-human resources to bring about effective instruction. Focus on secondary and post-secondary professional/technical education.

CTE 430 Leadership and Student Organizations
2 credits
Development of leadership skills; instruction in planning, implementation and supervision of professional-technical student organizations; and participation in regional leadership conferences.

CTE 431 Supervising CTE Career and Technical Student Organizations
1-3 credits, max 3
Supervising CTE CTSOs involves active participation in career and technical student organization (CTSOs). Students assist in the administration and supervision of secondary regional and/or state CTSO conferences, and involve themselves with content area post-secondary CTSO competitive events program. Students are responsible for arranging and financing travel to appropriate CTSO events.

CTE 447 Diverse Populations and Individual Differences
2-3 credits
Examines the impact of individual differences on teaching and learning.

CTE 460 Desktop Publishing
3 credits
Advanced desktop publication techniques, concepts, and applications through use of computer technology; planning, layout, and design of publications are highlighted. Recommended Preparation: CTE 415.

CTE 462 Communication Technology
3 credits
Investigation and laboratory activities associated with of a variety of communication technologies, including interpersonal, human to machine and machine to machine, through contemporary devices and materials. Recommended Preparation: CTE 415.

CTE 464 Career Guidance and Transitioning to Work
3 credits
Designed for career development counselors and facilitators; establishment of the three pillars of career guidance and how to implement the steps for developing a comprehensive individualized career plan.

CTE 470 Technical Competence
1-32 credits, max 32
Technical competence is gained from occupational credentials or passing of competency exams related to the bachelor of science degree in PTE education or technology. Grades for successful completion of CTE 470 will be transcripted as P (pass) normally during the student's last semester and completion of all degree requirements.

CTE 472 Teaching and Learning in Organizations
3 credits
Students examine research-based approaches to facilitate learning outcomes for occupational educators in post-secondary, secondary and private sector contexts; Instructional strategies and materials will be considered and developed to facilitate learning in technical skills, related applied academics, and workplace readiness knowledge and dispositions.

CTE 481 Computer-Integrated and Robotics Manufacturing Technologies
3 credits
In-depth examination and implementation of advanced computer aided drafting, 3D solids modeling, computer numerical control, basic and advanced toolpath generation, virtual machining environments, and robotics applications. Enrollment per section limited to lab stations available.
Prereq: CTE 267 or ENGR 105; and CTE 310, CTE 352, and ASM 202 .

CTE 484 (s) Internship in Career and Technical Education Teaching
3-14 credits, max 28
Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings.
Prereq: Admission to teacher education program
Coreq: EDCI 401 .

CTE 492 Business and Marketing Education Methods
3 credits
Teaching pedagogy, instructional materials and student evaluation strategies in Business and Marketing Education.
Prereq: Permission.

CTE 494 Senior Project
3 credits
In the last year of study, students select an individual design project related to their area of specialization within technology education. Some students may have the option of joining a Senior Design Team in the College of Engineering. Project must be approved by instructor.

CTE 495 Administrative Technology Management and Procedures
3 credits
Administrative office procedures and management techniques, advanced business document preparation, intermediate/advanced keyboarding skills, and ARMA filing rules. Recommended Preparation: CTE 415 and keyboarding proficiency.

CTE 498 (s) Internship
Credit arranged.

CTE 499 (s) Directed Study
Credit arranged.

CTE 500 Master's Res & Thesis
Credit arranged.

CTE 501 (s) Seminar
Credit arranged.

CTE 502 (s) Directed Study
Credit arranged.

CTE 503 (s) Workshop
Credit arranged.

CTE 504 (s) Special Topics
Credit arranged.

CTE 505 (s) Professional Development
Credit arranged
Joint-listed with CTE 405
Credits earned in this course will not be accepted toward grad degree programs. Professional development and enrichment. Additional projects/assignments required for graduate credit.

CTE 519 Database Applications and Information Management
3 credits
Joint-listed with CTE 419
Teaching and training strategies for database applications. Includes database management principles and methods of information retrieval, processing, storage and distribution. Advanced project reqd for graduate credit.

CTE 544 Idaho Leadership Institute
1-12 credits, max 12
Institute for the preparation of the next generation of Idaho's leaders in professional-technical education.
Prereq: Accepted into the Idaho Leadership Institute.

CTE 551 Principles and Philosophy of Career and Technical Education
3 credits
Joint-listed with CTE 351
Overview and interpretation of history, aims, and purposes of public education and professional-technical education; issues and programs comprising professional-technical education in Idaho and in the nation. Additional projects/assignments required for graduate credit.

CTE 597 (s) Practicum
Credit arranged
Application of theories and techniques; supervised field experiences in selected settings. Graded P/F.
Prereq: Permission.

CTE 598 (s) Internship
Credit arranged
Supervised experience in teacher education, administration, supervision, or ancillary services in professional-technical education. Graded P/F.
Prereq: Permission.

CTE 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

CTE 600 Doctoral Research & Dissertation
Credit arranged.

CHEMICAL ENGINEERING (CHE)

CHE 110 Introduction to Chemical Engineering
1 credit
Introduction to chemical engineering career opportunities and process principles including problem solving and documentation skills. Graded P/F.

CHE 123 Computations in Chemical Engineering
2 credits
Methods of analyzing and solving problems in chemical engineering using personal computers; spreadsheet applications, data handling, data fitting, material balances, experimental measurements, separations, and equation solving. Coordinated lec-lab periods.
Prereq: Min 520 SAT math or min 22 ACT math or 49 COMPASS Algebra or MATH 143 or MATH 170; or Permission
Coreq: MATH 143, MATH 170, or higher .

CHE 204 (s) Special Topics
Credit arranged.

CHE 210 Integrated Chemical Engineering Fundamentals
1 credit
Recitation support for fundamental STEM courses and process principles including problem solving and documentation skills. Twice a week, 2 hour recitation sessions. Graded P/F.
Prereq: CHE 110 and CHE 123 .

CHE 223 Material and Energy Balances
3 credits
Conservation of mass and energy calculations in chemical process systems.
Prereq: CHEM 112, CHEM 112L, MATH 175.

CHE 299 (s) Directed Study
Credit arranged.

CHE 307 Group Mentoring
1 credit, max 3
Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Students must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).
Prereq: Permission .

CHE 326 Chemical Engineering Thermodynamics
3 credits
Behavior and property estimation for nonideal fluids; phase and reaction equilibria; applications to industrial chemical processes.
Prereq: CHE 223, ENGR 320 and ENGR 335, MATH 310
Coreq: CHEM 305.

CHE 330 Separation Processes I
3 credits
Equilibrium stagewise operations, including distillation, extraction, absorption.
Prereq: CHE 326, CHEM 305.

CHE 340 Transport and Rate Processes I
4 credits
Cross-listed with MSE 340
Transport phenomena involving momentum, energy, and mass with applications to process equipment design. Coordinated lec-lab periods.
Prereq: ENGR 335, MATH 310, and CHE 223 or MSE 201 .

CHE 341 Transport and Rate Processes II
4 credits
Transport phenomena involving momentum, energy, and mass with applications to process equipment design. Coordinated lec-lab periods.
Prereq: CHE 340.

CHE 393 Chemical Engineering Projects
1-3 credits, max 9
Problems of a research or exploratory nature.
Prereq: Permission of department.

CHE 398 (s) Engineering Cooperative Internship
3 credits
Supervised internship in professional engineering settings, integrating academic study with work experience; requires written report; positions are assigned according to student's ability and interest. Graded P/F.
Prereq: Permission.

CHE 400 (s) Seminar
Credit arranged.

CHE 404 (s) Special Topics
Credit arranged
Prereq: Permission.

CHE 423 Reactor Kinetics and Design
3 credits
Chemical reaction equilibria, rates, and kinetics; design of chemical and catalytic reactors.
Prereq: CHE 223, MATH 310, CHEM 305.

CHE 433 Chemical Engineering Lab I
1 credit
Senior lab experiments in chemical engineering.
Prereq: CHE 330, CHE 341, CHE 423.

CHE 434 Chemical Engineering Lab II
1 credit
Senior lab experiments in chemical engineering.
Prereq: CHE 330, CHE 341, CHE 423.

CHE 440 Applied Mathematics in Chemical Engineering
3 credits
Mathematical approaches to modeling chemical behavior in transport, separation, reactor, and process systems.
Prereq: CHE 341 or permission .

CHE 444 Process Analysis and Control
3 credits
Process modeling, dynamics, and analysis. Coordinated lecture-lab periods. Recommended Preparation: CHE 223, MATH 310.

CHE 445 Digital Process Control
3 credits
Cross-listed with ECE 477
Dynamic simulation of industrial processes and design of digital control systems. Coordinated lecture-lab periods. Recommended Preparation: CHE 444 (Recommended Preparation for EE majors: ECE 350).

CHE 451 Environmental Management and Design
Credit arranged
Waste management application projects; projects require original design, working model, and report. May involve week-long trip to national competition. One lec and 3 hrs of lab a wk; weekly team status report meetings plus weekly task reviews with advisor.
Prereq: Permission (by invitation only).

CHE 452 Environmental Management and Design
Credit arranged
Gen Ed: Senior Experience
Waste management application projects; projects require original design, working model, and report. May involve week-long trip to national competition. One lec and 3 hrs of lab a wk; weekly team status report meetings plus weekly task reviews with advisor.
Prereq: Permission (by invitation only)

CHE 453 Process Analysis & Design I
3 credits
Cross-listed with MSE 453
Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. CHE 453 and CHE 454/MSE 453 and MSE 454 are to be taken in sequence. (Fall only)
Prereq: CHE 330, CHE 341, and CHE 423; or MSE 201, MSE 308, MSE 313, MSE 340, and MSE 412 .

CHE 454 Process Analysis and Design II
3 credits
Gen Ed: Senior Experience
Cross-listed with MSE 454
Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. CHE 453 and CHE 454 are to be taken in sequence. (Spring only)
Prereq: CHE 453 or MSE 453 .

CHE 455 Surfaces and Colloids
3 credits
Chemical and physical phenomena near material interfaces and behaviors of colloidal particles in dispersing media.
Prereq: CHE 326 or CHEM 305 or permission .

CHE 460 Biochemical Engineering
3 credits
Joint-listed with CHE 560
Application of chemical engineering to biological systems including fermentation processes, biochemical reactor design, and biological separation processes. Additional projects/assignments reqd for grad cr.

CHE 491 (s) Seminar
1 credit
Recent developments and topics. Graded P/F
Prereq: Senior standing.

CHE 498 (s) Internship
Credit arranged.

CHE 499 (s) Directed Study
Credit arranged.

CHE 500 Master's Research and Thesis
Credit arranged.

CHE 501 (s) Seminar
Credit arranged.

CHE 502 (s) Directed Study
Credit arranged.

CHE 504 (s) Special Topics
Credit arranged.

CHE 505 (s) Professional Development
Credit arranged.

CHE 515 Transport Phenomena
3 credits
Advanced treatment of momentum, energy, and mass transport processes; solution techniques. Cooperative: open to WSU degree-seeking students.
Prereq: B.S.Ch.E. and Equivalent of CHE 340, CHE 341 or Permission.

CHE 527 Thermodynamics
3 credits
Thermodynamic laws for design and optimization of thermodynamic systems, equations of state, properties of ideal and real fluids and fluid mixtures, stability, phase equilibrium, chemical equilibrium, applications of thermodynamic principles. Cooperative: open to WSU degree-seeking students.
Prereq: B.S.Ch.E. and Equivalent of CHE 326 or Permission.

CHE 529 Chemical Engineering Kinetics
3 credits
Interpretation of kinetic data and design of reactors for heterogeneous chemical reaction systems; heterogeneous catalysis, gas-solid reactions, gas-liquid reactions; packed bed reactors, fluidized bed reactors. Cooperative: open to WSU degree-seeking students.
Prereq: B.S.Ch.E. and Equivalent of CHE 423 or Permission.

CHE 536 Electrochemical Engineering
3 credits
Cross-listed with NE 536
Application of chemical engineering principles to electrochemical systems; thermodynamics, kinetics, and mass transport in electrochemical systems; electrochemical process design. Recommended preparation: graduate engineering standing.

CHE 541 Chemical Engineering Analysis I
3 credits
Mathematical analysis of chemical engineering operations and processes; mathematical modeling and computer applications. Cooperative: open to WSU degree-seeking students.
Prereq: B.S.Ch.E. and Equivalent of CHE 444 or Permission.

CHE 545 Mass Transfer Operations I
3 credits
Diffusional and equilibrium operations.
Prereq: B.S.Ch.E. and equivalent of CHE 341 or Permission .

CHE 560 Biochemical Engineering
3 credits
Joint-listed with CHE 460
Application of chemical engineering to biological systems including fermentation processes, biochemical reactor design, and biological separation processes. Additional projects/assignments reqd for grad cr.

CHE 582 Spent Nuclear Fuel Management and Disposition
3 credits
Cross-listed with NE 582
The management of nuclear fuel after removal from a nuclear reactor; storage options, recycle and recovery of uranium and other radionuclides, geological repositories and related topics.
Prereq: Permission .

CHE 599 (s) Non-thesis Master's Research
Credit arranged.

CHE 600 Doctoral Research and Dissertation
Credit arranged.

CHEMISTRY (CHEM)

Vertically-related courses in this subject field are:

- CHEM 111 -- CHEM 112 -- CHEM 253
- CHEM 101 -- CHEM 275

CHEM 101 Introduction to Chemistry
3 credits
Gen Ed: Natural and Applied Sciences
Full credit may be earned in only one of the following: CHEM 101 or CHEM 111. General treatment of the fundamentals of chemistry. Does not satisfy the prereq for CHEM 112.

CHEM 101L Introduction to Chemistry Laboratory
1 credit
Gen Ed: Natural and Applied Sciences
This is the companion laboratory course to CHEM 101 and provides an introduction to Chemistry lab practices. It does not satisfy the lab requirement for CHEM 111 or CHEM 112. One 3-hour lab a week.
Prereq or Coreq: CHEM 101 .

CHEM 111 General Chemistry I
3 credits
Gen Ed: Natural and Applied Sciences
Full credit may be earned in only one of the following: CHEM 101, or CHEM 111. Note that grades in CHEM 111 will supersede any grades earned in CHEM 101. Intensive treatment of principles and applications of chemistry. Recommended Preparation: A grade of 'B' or better in a high school chemistry course.
Prereq: min 580 SAT math or min 25 ACT math , or min 46 ALEKS; or a grade of 'C' or better in CHEM 101, MATH 143, MATH 160, or MATH 170; or Permission .

CHEM 111L General Chemistry I Laboratory
1 credit
Gen Ed: Natural and Applied Sciences
This is the companion laboratory course to CHEM 111 and provides an intensive treatment of Chemistry lab practices. One 3-hour lab a week.
Prereq or Coreq: CHEM 111 .

CHEM 112 General Chemistry II
3 credits
Gen Ed: Natural and Applied Sciences
Continuation of CHEM 111. Some work in inorganic chemistry, kinetics, equilibrium, liquids, solids, acid-base, electrochemistry, nuclear chemistry, thermodynamics, and qualitative inorganic analysis.
Prereq: CHEM 111 and CHEM 111L or Permission.

CHEM 112L General Chemistry II Laboratory
2 credits
Gen Ed: Natural and Applied Sciences
This is the companion laboratory course to CHEM 112 and teaches Chemistry lab practices in inorganic chemistry, kinetics, equilibrium, acid-base, electrochemistry, thermodynamics, and qualitative analysis. One 3-hour lab and one recitation hour a week.
Prereq or Coreq: CHEM 112 .

CHEM 121 Glassblowing
1 credit
Techniques used in constructing scientific apparatus from glass. Graded P/F. One 3-hr lab a wk.\
Prereq: Permission of department.

CHEM 200 (s) Seminar
Credit arranged.

CHEM 204 (s) Special Topics
Credit arranged.

CHEM 253 Quantitative Analysis
3 credits
Fundamental principles and techniques of chemical analysis; intro to sampling, standardization, data evaluation, gravimetric/volumetric methods, and instrumental techniques. (Fall only)
Prereq: CHEM 112, CHEM 112L.

CHEM 254 Quantitative Analysis: Lab
2 credits
Laboratory portion of Quantitative Analysis (Chem 253).
Prereq or **Coreq:** CHEM 253 .

CHEM 275 Carbon Compounds
3 credits
Aspects of organic chemistry important to students in the life sciences.
Prereq: CHEM 101 and CHEM 101L or CHEM 111 and CHEM 111L or Permission.

CHEM 276 Carbon Compounds Lab
1 credit
Lab to accompany CHEM 275; for students who need only 1 cr of lab. One 3-hr lab a wk.
Prereq or **Coreq:** CHEM 275 or CHEM 277.

CHEM 277 Organic Chemistry I
3 credits
Principles and theories of organic chemistry; properties, preparation, and reactions of organic compounds.
Prereq: CHEM 112, CHEM 112L.

CHEM 278 Organic Chemistry I: Lab
1 credit
One 3-hr lab a wk.
Prereq or **Coreq:** CHEM 277.

CHEM 299 (s) Directed Study
Credit arranged.

CHEM 302 Principles of Physical Chemistry
3 credits
Emphasis on topics important to biological and agricultural science. (Fall only)
Prereq: CHEM 112, CHEM 112L, MATH 160 or MATH 170 or MATH 175, and PHYS 111, PHYS 111L, or Permission.

CHEM 303 Principles of Physical Chemistry Lab
1 credit
Lab to accompany CHEM 302. One 3-hr lab a wk. (Fall only)
Prereq or **Coreq:** CHEM 302.

CHEM 305 Physical Chemistry
3 credits
Kinetic theory, thermodynamics (work, heat and energy); state functions, thermochemistry, the second law of thermodynamics; free energy and mixtures; electrolyte solutions and phase equilibrium; chemical and electrochemical equilibrium. (Fall only)
Prereq: CHEM 112 and CHEM 112L, and MATH 275
Coreq: PHYS 212 or PHYS 213.

CHEM 306 Physical Chemistry II
3 credits
Kinetic theory, atomic and molecular structure, quantum mechanics, statistical mechanics.(Spring only)
Prereq: CHEM 305 .

CHEM 307 Physical Chemistry Lab
1 credit
Lab to accompany CHEM 305, CHEM 306. One 3-hr lab a wk. (Fall only)
Prereq or **Coreq:** CHEM 305.

CHEM 308 Physical Chemistry Lab
1 credit
Lab to accompany CHEM 305, CHEM 306. One 3-hr lab a wk. (Spring only)
Prereq or **Coreq:** CHEM 306.

CHEM 372 Organic Chemistry II
3 credits
Continuation of CHEM 277. (Spring only)
Prereq: CHEM 277.

CHEM 374 Organic Chemistry II: Lab
1 credit
Lab to accompany CHEM 372; includes synthesis, structure determination, and mechanisms. One 3-hr lab a wk. (Spring only)
Prereq: CHEM 278
Prereq or **Coreq:** CHEM 372.

CHEM 400 (s) Seminar
Credit arranged.

CHEM 404 (s) Special Topics
Credit arranged.

CHEM 409 Proseminar
1 credit
Gen Ed: Senior Experience
Current publications in chemistry and chemical engineering with reports on typical scientific papers. Preparation of application materials for graduate work and/or careers in chemistry.
Prereq: CHEM 372 and junior standing.

CHEM 418 Environmental Chemistry
3 credits
Joint-listed with CHEM 518.
Chemistry of atmosphere, soil, and water; pollution monitoring and remediation; treatment of waste in the environment. Additional projects/assignments reqd for grad cr. (Spring only)
Prereq: CHEM 253, CHEM 254, and CHEM 275 or CHEM 277, or Permission.

CHEM 436 Electronics for Scientists
2-4 credits, max 4)
Joint-listed with CHEM 535.
Theory and application of analog and digital electronics used in scientific instrumentation. Registration for CHEM 535 requires completion of an additional term paper or other assignment (Fall, alt/yrs).
Prereq: *Permission*.

CHEM 454 Instrumental Analysis
3-4 credits
For students in chemistry and allied fields. Techniques in operating new and specialized instruments for qualitative and quantitative analysis and analytical methods of an advanced nature. Three lec and one 4-hr lab a wk. Permission required to register for 3 credits (Spring only)
Prereq: CHEM 253, CHEM 254, and CHEM 305
Prereq or **Coreq:** CHEM 306 .

CHEM 455 Survey of Analytical Chemistry
3 credits
Fundamentals of modern analytical chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both CHEM 454 and CHEM 455.
Prereq: Permission.

CHEM 463 Inorganic Chemistry
3 credits
Principles, complex ions and coordination compounds, theory of acids and bases, bonding theory, non-aqueous solvents, familiar elements and their relationship to the periodic table. (Fall only)
Prereq: CHEM 305 or Permission.

CHEM 464 Inorganic Chemistry
3 credits
Principles, complex ions and coordination compounds, theory of acids and bases, bonding theory, non-aqueous solvents, familiar elements and their relationship to the periodic table. Additional projects/assignments reqd for grad cr. (Spring only)
Prereq or **Coreq:** CHEM 463, or CHEM 466, or Permission.

CHEM 465 Inorganic Chemistry Laboratory
1 credit
Lab to accompany CHEM 464. One 3-hr lab a wk. (Spring only)
Coreq: CHEM 464.

CHEM 466 Survey of Inorganic Chemistry
3 credits
Fundamentals of modern inorganic chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both CHEM 463 and CHEM 466.
Prereq: CHEM 306 and Permission.

CHEM 472 Medicinal Chemistry
3 credits
Joint-listed with CHEM 572
Synthetic chemistry necessary for design and preparation of medicinal agents, and mechanistic chemistry germane to action of pharmaceuticals. Graduate students are required to write an original research proposal on a topic related to drug discovery. (Alt/yrs)
Prereq or **Coreq:** CHEM 473, CHEM 476 or Permission.

CHEM 473 Intermediate Organic Chemistry
3 credits
Theories and mechanisms of organic chemistry. (Fall only)
Prereq: CHEM 372
Prereq or **Coreq:** CHEM 306.

CHEM 476 Survey of Organic Chemistry
3 credits
Fundamentals of modern organic chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both CHEM 473 and CHEM 476.
Prereq: Permission.

CHEM 491 (s) Research
1-6 credits, max 12)
Submission of a report of the research done for placement in the permanent dept files is required.
Prereq: Permission of department.

CHEM 495 Statistical Thermodynamics
3 credits
Cross-listed with PHYS 333
Classical thermodynamics, entropy, thermodynamic potentials, kinetic theory, classical and quantum statistical mechanics, ensembles, partition functions, introduction to phase transitions.
Prereq: CHEM 306 or PHYS 305 or equivalent.

CHEM 496 Survey of Physical Chemistry
3 credits
Fundamentals of modern physical chemistry. Open only to chemistry M.S. and Ph.D. students. Cr is not allowed in both CHEM 495 and CHEM 496.
Prereq: Permission.

CHEM 498 (s) Internship
Credit arranged.

CHEM 499 (s) Directed Study
Credit arranged.

CHEM 500 Master's Research and Thesis
Credit arranged.

CHEM 501 (s) Seminar
1 credit, max 2).

CHEM 502 (s) Directed Study
Credit arranged.

CHEM 503 (s) Workshop
Credit arranged.

CHEM 504 (s) Special Topics
Credit arranged.

CHEM 505 (s) Professional Development
Credit arranged.

CHEM 506 Introduction to Teaching and Research Skills
2 credits
Skills required of teaching assistants in laboratory, recitations, office hours, help sessions; skills required for research; use of library; introduction to faculty research. Graded P/F. (Fall only)
Prereq: Permission.

CHEM 509 Advanced Physical Chemistry
3 credits
Application of quantum theory to chemical bonding, molecular spectroscopy, and molecular structure. (Spring only)
Prereq: CHEM 306, CHEM 495, CHEM 496, or Permission.

CHEM 511 Seminar
0 credits.

CHEM 518 Environmental Chemistry
3 credits
Joint-listed with CHEM 418.
Chemistry of atmosphere, soil, and water; pollution monitoring and remediation; treatment of waste in the environment. Additional projects/assignments reqd for grad cr. (Spring only)
Prereq: CHEM 253, CHEM 254, and CHEM 275 or CHEM 277, or Permission.

CHEM 535 Electronics for Scientists
2-4 credits, max 4)
Theory and application of analog and digital electronics used in scientific instrumentation. Registration for CHEM 535 requires completion of an additional term paper or other assignment (Fall, alt/yrs).
Prereq: Permission.

CHEM 542 Biochemistry and Molecular Biology
3 credits
Cross-listed with BIOL 554.
Intermediate biochemistry; areas of emphasis include molecular biology, nitrogen and lipid metabolism. Extra oral and/or written assignments required for grad credit. (Spring only)
Prereq: CHEM 372; BIOL 380 or CHEM 302 or CHEM 306; or Permission.

CHEM 550 Radioanalytical Chemistry
2 credits
Fundamental concepts of radiochemistry, including the principles of radioactive decay processes and counting techniques; in-depth treatment of radioanalytical techniques, especially neutron activation and isotope dilution methods; decay processes as sources of x-rays; the use of synchrotron radiation in analytical chemistry. (Alt/yrs)
Prereq: CHEM 454, or CHEM 455, or Permission.

CHEM 551 Electronic Spectrometry
2-3 credits, max 3
A brief review of fundamental concepts, including electronic transitions, optical properties of materials, and laws of radiation absorption; detailed coverage of instrumentation used for ultraviolet and visible absorption spectroscopy, with regard to optical components, overall design strategy, and signal processing; analytical performance related to these aspects and presented from both theoretical and practical standpoints; in-depth coverage of luminescence spectroscopy, including phosphorimetry and fluorimetry; atomic spectroscopy (both flame and plasma-based versions), including principles of operation, instrumental requirements, and analytical application; survey of x-ray absorption and fluorescence spectroscopy. (Alt/yrs)
Prereq: CHEM 454, CHEM 455 or Permission.

CHEM 553 Separation Theory and Chromatography
2-3 credits, max 3)
Gas and liquid chromatography and related fields. Students enrolled in CHEM 553 are required to complete additional written assignments. (Alt/yrs)
Prereq: CHEM 306 .

CHEM 556 Molecular Spectroscopy
3 credits
Interpretation of IR, UV, NMR, and mass spectra. Registration for CHEM 556 requires completion of additional assignments.
Prereq: CHEM 306 or Permission .

CHEM 558 Electrochemistry
2-3 credits, max 3)
Fundamental concepts of electrochemistry, including the principles of redox processes; in-depth treatment of electroanalytical techniques, especially voltammetric and potentiometric methods; advanced treatment of selected topics, including ultramicro and in vivo electrochemical techniques. (Alt/yrs)
Prereq: CHEM 454, or CHEM 455, or Permission.

CHEM 571 (s) Topics In Organic Chem
1-9 credits, max 9)
Selected topics from the current literature.
Prereq: CHEM 473, CHEM 476, or Permission.

CHEM 572 Medicinal Chemistry
3 credits
Joint-listed with CHEM 472
Synthetic chemistry necessary for design and preparation of medicinal agents, and mechanistic chemistry germane to action of pharmaceuticals. Graduate students are required to write an original research proposal on a topic related to drug discovery. (Alt/yrs)
Prereq or **Coreq:** CHEM 473, CHEM 476 or Permission.

CHEM 590 Doctoral Research Proposal
1 credit
Taken no later than one semester after completion of cumulative exams; required for advancement to Ph.D. candidacy. Includes review of relevant literature and original research proposal describing the student's intended research project.

CHEM 598 (s) Internship
Credit arranged.

CHEM 599 (s) Non-thesis Master's Research
Credit arranged.

CHEM 600 Doctoral Research and Dissertation
Credit arranged.

CHINESE (CHIN)

Vertically-related courses in this subject field are:

- CHIN 110 - CHIN 112 - CHIN 210 - CHIN 212

A maximum of 16 credits may be earned for vertical credit in any language in the Department of Modern Languages & Cultures.

CHIN 107 Beginning Chinese Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the beginning Chinese level. Graded P/F.

CHIN 110 Elementary Chinese I
4 credits
Gen Ed: International
Writing system, pronunciation, vocabulary, and functional grammar. Students with Chinese experience who place higher than 110 on the placement exam may not enroll in CHIN 110, but may earn credit for CHIN 110 by successfully completing a higher vertically-related course.

CHIN 112 Elementary Chinese II
4 credits
Gen Ed: International
Writing system, pronunciation, vocabulary, and functional grammar.
Prereq: *CHIN 110 or placement exam .*

CHIN 204 (s) Special Topics
Credit arranged*.*

CHIN 207 Intermediate Chinese Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the intermediate Chinese level. Graded P/F.

CHIN 210 Intermediate Chinese I
4 credits
Gen Ed: International
Review and practice of basic language skills; increased emphasis on reading, writing, and free discussion.
Prereq: *CHIN 112 or placement exam.*

CHIN 212 Intermediate Chinese II
4 credits
Gen Ed: International
Review and practice of basic language skills; increased emphasis on reading, writing, and free discussion.
Prereq: *CHIN 210 or placement exam.*

CHIN 299 (s) Directed Study
Credit arranged*.*

CHIN 310 Advanced Chinese 1: Oral Communication
3 credits
This course will focus on improving oral expression to develop greater fluency, accuracy, and confidence in spoken Chinese. Conversational topics are based on contemporary issues in Chinese-speaking regions. This course will enhance students' advanced conversational skills through descriptions, summaries of texts, active participation in discussions, debates and oral presentations in class.
Prereq: *CHIN 212 or equivalent .*

CHIN 312 Advanced Chinese 2: Reading & Translation
3 credits
This course will focus on improving students' competency in reading and translating written Chinese. In this course students will enhance their reading fluency and will learn to translate from Chinese to English and English to Chinese. The selection of texts will be limited to modern literature, documents, and news items on Chinese culture and international affairs. In their translations students will learn to focus on accuracy as well as stylistic appropriateness.
Prereq: *CHIN 212 or equivalent .*

CHIN 314 Advanced Chinese 3: Writing & Grammar
3 credits
This course will focus on improving students' competency in written Chinese and grammar. This course will increase students' linguistic competence by focusing on introducing advanced Chinese grammar and rhetoric; standards of composition and written communication; and comprehensive training in Chinese writing.
Prereq: *CHIN 212 or equivalent .*

CHIN 316 Business Chinese
3 credits
This course is an advanced Chinese language course designed for students who are interested in doing business in Chinese-speaking communities (including China, Taiwan, Hong Kong, and Singapore). Students learn specialized business and economic vocabulary and conventions of business interaction and correspondence. Practical business-focused reading, writing, discussion, and presentation will prepare students to participate in various business activities and to deal with different business documents.
Prereq: *CHIN 212 or equivalent .*

CHIN 398 (s) Internship
1-3 credits, max arranged)*.*

CHIN 404 (s) Special Topics
Credit arranged*.*

CHIN 410 Introduction to Teaching Chinese as a Foreign Language
3 credits
This course introduces students to the basic theoretical foundations, pedagogical models, and practical skills necessary to teach Chinese as a foreign language. This class will provide students with a solid foundation to pursue further study and training in teaching Chinese language to learners of all ages.
Prereq: *CHIN 310 or equivalent .*

CHIN 412 Advanced Readings in Chinese
3 credits
This course is an advanced Chinese language course that surveys a wide variety of 20th- and 21st-century written materials, including texts from literature, the social sciences, religion, and cultural history. This class specifically focuses on content and style with extensive discussion and frequent written assignments in Chinese.
Prereq: *CHIN 312 or equivalent .*

CHIN 414 Advanced Chinese Composition
3 credits
This course is an advanced Chinese language course to enhance student development of written proficiency in Chinese based on readings, translations, and frequent compositions around selected contemporary themes and topics.
Prereq: *CHIN 314 or equivalent .*

CHIN 498 (s) Internship
Credit arranged*.*

CHIN 499 (s) Directed Study
Credit arranged.

CIVIL ENGINEERING (CE)

CE 115 Introduction to Civil Engineering
1 credit
Introduction to civil engineering problem solving skills, development of software use skills, graphical analysis, data analysis, and oral and written communication skills. One weekly two hour laboratory with up to 3 out-of-class activities.
Prereq: Major in civil engineering .

CE 200 (s) Seminar
Credit arranged.

CE 203 (s) Workshop
3 credits.

CE 204 (s) Special Topics
Credit arranged.

CE 211 Engineering Surveying
3 credits
Theory of measurements, basic equations for survey computations, types of distribution of errors, topographical and land surveying introduction to geographic information systems and global positioning systems, coordinate geometry and coordinate transformations, site engineering projects using land development software, application of surveying methods to construction; site engineering, and civil engineering projects surveying instruments. Two lecture and one 3-hour lab a week; periodic field data collection and one or two field trips.
Prereq: MATH 143 or MATH 170 or MATH 175, and ENGR 105. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 215 Civil Engineering Analysis and Design
3 credits
Application of basic science, mathematics, and fundamental engineering principles to solution of civil engineering design problems; use of structured programming concepts in design; develop oral and written communication skills.
Prereq: CE 115, ENGR 105, and MATH 170. A minimum grade of 'C' or better is required for all pre/coreqs.
Coreq: PHYS 211/PHYS 211L. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 298 (s) Internship
Credit arranged.

CE 299 (s) Directed Study
Credit arranged.

CE 322 Hydraulics
4 credits
Applied principles of fluid mechanics; closed conduit flow, hydraulic machinery, open channel flow; design of hydraulic systems. Laboratory exercises on closed conduit flow, hydraulic machinery, open channel flow and mixing process. Three lec a week and 4-6 labs a semester.
Prereq: CE 215, MATH 310, PHYS 211, ENGR 220 and ENGR 335. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 325 Fundamentals of Hydrologic Engineering
3 credits
Cross-listed with BE 355
Principles of hydrologic science and their application to the solution of hydraulic, hydrologic, environmental, and water resources engineering problems.
Prereq: MATH 310, STAT 301, and ENGR 335. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 330 Fundamentals of Environmental Engineering
3 credits
Principles of engineered environmental systems, including physical, chemical, and microbiological processes; types and effects of pollutants; regulations; treatment of water, wastewater, sludges, and solid waste; control of air and agricultural pollution. Two lectures and one 3-hour lab a week.
Prereq: ENGR 335, CHEM 111, CE 215 and MATH 310. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 342 Theory of Structures
3 credits
Stresses and strains in statically determinate and indeterminate beam, truss, and rigid frame structures; effects of moving loads; matrix displacement method. Two lec and one 3-hr lab a wk.
Prereq: ENGR 350, MATH 275, MATH 310, and PHYS 211/PHYS 211L. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 357 Properties of Construction Materials
4 credits
Principles of construction materials, composition, physical and mechanical properties, test methods, data analysis and interpretations, and report writing; materials covered are aggregates, cements, concretes, metals, wood, and composites. Three lec and two hrs of lab.
Prereq: CE 215, ENGR 350, MATH 310. A minimum grade of 'C' or better is required for all pre/coreqs.
Coreq: STAT 301. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 360 Fundamentals of Geotechnical Engineering
4 credits
Soil composition, descriptions, and classification systems; permeability and seepage; capillarity and suction; total, effective, and neutral stresses, compression and volume changes; shear strength; compaction. Three lectures, and 2 hours of lab a week.
Prereq: CE 215, ENGR 335, ENGR 350, and MATH 310. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 372 Fundamentals of Transportation Engineering
3 credits
Intro to planning, design, and operation of highway and traffic, public transportation, and airport systems. Three lectures a week; periodic field data collection and one or two field trips.
Prereq: STAT 301 and CE 211. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 398 (s) Internship
Credit arranged.

CE 400 (s) Seminar
Credit arranged.

CE 403 (s) Workshop
Credit arranged.

CE 404 (s) Special Topics
Credit arranged.

CE 411 Engineering Fundamentals
1 credit
Review of basic engineering and science material covered in Fundamentals of Engineering exam. Offered for the nine to ten week period prior to the exam date. Graded P/F.
Prereq: Senior standing or Permission.

CE 413 Bridge Design
3 credits
Joint-listed with CE 513.
Structural systems for bridges, loading analysis by influence lines, slab and girder bridges, composite design, pre-stressed concrete, rating of existing bridges, specifications and economic factors.
Prereq: CE 441 or CE 444 .

CE 421 Engineering Hydrology
3 credits
Hydrologic design including: statistical methods, rainfall analysis and design storm development, frequency analysis, peak discharge estimation, hydrograph analysis and synthesis, flow routing, and risk analysis.
Prereq: CE 325 or BE 355. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 422 Hydraulic Structures Analysis and Design
3 credits
Hydraulic design and stability analysis of hydraulic structures, such as dams, weirs, spillways, stilling basins, culverts, levees, fish ladders etc. Project oriented problems. Extra design projects or different design projects for grad cr. One field trip. Cooperative: open to WSU degree-seeking students.
Prereq: CE 322 or Equivalent, ENGR 360, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 428 Open Channel Hydraulics
3 credits
Hydraulics of uniform and varied flow in open channels with fixed and movable beds. Recommended Preparation: CE 322. Cooperative: open to WSU degree-seeking students.

CE 431 Design of Water and Wastewater Systems I
3 credits
Joint-listed with CE 511
Application of fundamental engineering science to the design of systems for the treatment of domestic and industrial water supplies; treatment and re-use of domestic sewage and industrial wastes. Additional projects/assignments required for graduate credit.
Prereq: CE 322, CE 330, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 432 Design of Water and Wastewater Systems II
3 credits
Joint-listed with CE 532
Application of unit operations and processes to design of integrated wastewater treatment systems; critical analysis of existing designs. Additional projects/assignments required for grad credit. Cooperative: open to WSU degree-seeking students.
Prereq: CE 431. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 433 Water Quality Management
3 credits
Joint-listed with CE 533
Physical, chemical, and biological techniques for analysis of water quality management problems; development of design criteria for corrective systems. Additional projects/assignments required for grad credit.
Prereq: Permission .

CE 441 Reinforced Concrete Design
3 credits
Strength design method in accordance with latest ACI code. Two lectures and one 2-hour lab a week.
Prereq: CE 342. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 444 Steel Design
3 credits
Structural steel design using latest AISC specifications. Two lectures and one 2-hour lab a week.
Prereq: CE 342. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 445 Matrix Structural Analysis
3 credits
Joint-listed with CE 545
Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, and nonlinear analysis. Special project demonstrating mature understanding of materials reqd for grad cr.
Prereq: CE 342 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 460 Geotechnical Engineering Design
3credits
Applications of soil mechanics in design of shallow and deep foundations, earth retaining structures, excavations, and soil exploration.
Prereq: CE 360 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 473 Highway Design
3 credits
Theory and practice in highway design, highway functional classification concepts, design controls and criteria, geometric design of highways and streets, cross section and roadside design, and highway safety manual applications.
Prereq: CE 211. A minimum grade of 'C' or better is required for all pre/coreqs.
Coreq: CE 372. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 474 Traffic Systems Design
3 credits
Analysis and design of network traffic systems; system evaluation using computer optimization and simulation; development and testing of alternative system design. Two lec and one 3-hr lab a wk; field data collection and field site visits. Cooperative: open to WSU degree-seeking students.
Prereq: CE 372 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 475 Pavement Design and Evaluation
3 credits
Pavement design processes; stress-strain analysis in multi-layer elastic system; materials selection and characterization methods; traffic loads, design methods for flexible and rigid pavements; performance evaluation of existing pavements; condition survey and ratings; introduction to pavement maintenance and rehabilitation techniques.
Prereq: CE 357 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 484 Engineering Law and Contracts
3 credits
Project engineering techniques for planning, scheduling, and controlling typical engineering and construction projects. Contract law and application to engineering services agreements and construction contracts; preparing technical specifications, torts, professional liability, and alternate dispute resolution.
Prereq: Senior standing in engineering.

CE 491 Civil Engineering Professional Seminar
1 credit
Employment and technical topics; preparation and presentation of professional paper. Course to be taken in last semester before graduation. Graded P/F.
Prereq: Senior standing in Civil Engineering.

CE 494 Senior Design Project
3 credits
Gen Ed: Senior Experience
Comprehensive civil engineering design project. Requires integration of skills acquired in civil engineering elective courses, written reports, and oral presentations.
Prereq: Senior standing in Civil Engineering and Permission.

CE 498 (s) Internship

CE 499 (s) Directed Study
Credit arranged.

CE 500 Master's Research and Thesis
Credits arranged.

CE 501 (s) Seminar
Credit arranged
Conferences and reports on current developments.

CE 502 (s) Directed Studies
Credits arranged.

CE 503 (s) Workshop
Credit arranged.

CE 504 (s) Special Topics
Credit arranged.

CE 505 (s) Professional Development

CE 507 River Restoration
3 credits
This course focuses on the principles and practices used in river restoration. The potential assumptions and errors with common restoration methodologies and possible ways to improve such channel designs are discussed. A number of case studies are used to evaluate the success of various restoration techniques. The course includes homework sets and individual projects and has a mandatory field trip to a local restored site. Recommended classes to take prior to this include at least one of the following: CE 535, CE 322, CE 428, or CE 520.
Prereq: ENGR 335 or Instructor Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 510 Advanced Mechanics of Materials
3 credits
Cross-listed with ME 539.
Limitations of results of elementary mechanics of materials, complex situations of loading and structural geometry, applications to design of machines and structure, introduction to elasticity. Cooperative: open to WSU degree-seeking students.
Prereq: ME 341 or CE 342 .

CE 511 Design of Water and Wastewater Systems I
3 credits
Joint-listed with CE 431
Application of fundamental engineering science to the design of systems for the treatment of domestic and industrial water supplies; treatment and re-use of domestic sewage and industrial wastes. Additional projects/assignments required for graduate credit.
Prereq: CE 322, CE 330, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 512 Advanced Topics in Waste Management and Treatment
3 credits
Modeling, analysis, and design of advanced and emerging engineering technologies and processes for waste management/treatment and resource recovery.
Prereq: Instructor Permission .

CE 513 Bridge Design
3 credits
Joint-listed with CE 413.
Structural systems for bridges, loading analysis by influence lines, slab and girder bridges, composite design, pre-stressed concrete, rating of existing bridges, specifications and economic factors. Cooperative: Open to WSU degree-seeking students.
Prereq: CE 441 or CE 444 .

CE 519 Fluid Transients
3 credits
Cross-listed with ME 519.
Development of concepts and modeling techniques for unsteady flow of liquid and gas in piping systems; extensive computer programming used to develop tools for analysis, design, and control of transients. (Alt/yrs)
Prereq: MATH 310 and ENGR 335. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 520 Fluid Dynamics
3 credits
Cross-listed with ME 520.
Credit not granted for both ME 420 and ME 520. A second fluid dynamics course featuring vector calculus and integral and differential forms of the conservation laws. Topics include fluid properties, fluid statistics, inviscid flow; conservation of mass, momentum, and energy; and turbulence. Other topics may be covered. Additional projects/assignments reqd for grad cr.
Prereq: ENGR 335, MATH 310, or Permission.

CE 521 Sedimentation Engineering
3 credits
Intro to river morphology and channel responses; fluvial processes of erosion, entrainment, transportation, and deposition of sediment. Cooperative: open to WSU degree-seeking students.
Prereq: CE 428 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 522 Hydraulic Structures Analysis and Design
3 credits
Hydraulic design and stability analysis of hydraulic structures, such as dams, weirs, spillways, stilling basins, culverts, levees, fish ladders etc. Project oriented problems. Extra design projects or different design projects for grad cr. One field trip. Cooperative: open to WSU degree-seeking students.
Prereq: CE 322 or Equivalent, ENGR 360, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 526 Aquatic Habitat Modeling
3 credits
The course objective is to learn the underlying principles of all components required for aquatic habitat modeling, to be able to perform such projects in riverine ecosystems including project design, data collection, data analysis and interpretation of the results and to learn the use of computational aquatic habitat models. Students will be working on their own modeling projects using the simulation model CASiMiR.
Prereq: CE 322 and CE 325 or BE 355; or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 531 Environmental Engineering Unit Operations
3 credits
Analysis and design of physical and chemical operations of water and waste treatment; flow models, sedimentation, flocculation, filtration, and water conditioning. Cooperative: open to WSU degree-seeking students.
Prereq: Permission .

CE 532 Design of Water and Wastewater Systems II
3 credits
Joint-listed with CE 432
Application of unit operations and processes to design of integrated wastewater treatment systems; critical analysis of existing designs. Additional projects/assignments required for grad credit. Cooperative: open to WSU degree-seeking students.
Prereq: CE 431. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 533 Water Quality Management
3 credits
Joint-listed with CE 433
Physical, chemical, and biological techniques for analysis of water quality management problems; development of design criteria for corrective systems. Additional projects/assignments required for graduate credit.
Prereq: Permission .

CE 534 Environmental Engineering Unit Processes
3 credits
Aeration system design, biological oxidations, growth kinetics, process design of suspended growth and fixed film aerobic and anaerobic systems, biological nutrient removal, land treatment systems. Cooperative: open to WSU degree-seeking students.
Prereq: CE 431 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 535 Fluvial Geomorphology and River Mechanics
3 credits
Hydraulic and morphologic processes of rivers. Drainage network development, channel hydraulics and shear stress partitioning via boundary layer theory, hydraulic geometry and cross-sectional form, sediment transport and bed material sampling, reach-scale morphologies and processes from headwater streams to lowland rivers, physical processes of forest rivers, sediment budgets, and river valley evolution. Field exercises emphasize quantitative analysis of fluvial processes and channel form, acquisition of field skills (measuring hydraulic and geomorphic variables, topographic surveying), and scientific writing. (Alt/yrs)
Prereq: CE 428 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 541 Reliability of Engineering Systems
3 credits
Fundamentals of reliability theory, system reliability analysis including common-mode failures and fault tree and event tree analysis, time-dependent reliability including testing and maintenance, propagation of uncertainty, human reliability analysis, practical applications in component and system design throughout the semester. Cooperative: open to WSU degree-seeking students.
Prereq: Permission.

CE 542 Advanced Design of Steel Structures
3 credits
Plate girder design; local and global buckling; plastic collapse analysis; shear and moment-resisting connections; eccentrically-loaded connections. Cooperative: open to WSU degree-seeking students.
Prereq: CE 444 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 543 Dynamics of Structures
3 credits
Equations of motion, free vibration, damping mechanisms, harmonic, impulse, and seismic loading; shock and seismic response spectra, time and frequency domain analysis, modal analysis, structural dynamics in building codes. Cooperative: open to WSU degree-seeking students.

CE 545 Matrix Structural Analysis
3 credits
Joint-listed with CE 445
Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, and nonlinear analysis. Special project demonstrating mature understanding of materials reqd for grad cr.
Prereq: CE 342 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 546 Finite Element Analysis
3 credits
Cross-listed with ME 549.
Formulation of theory from basic consideration of mechanics; applications to structural engineering, solid mechanics, soil and rock mechanics; fluid flow. Cooperative: open to WSU degree-seeking students.
Prereq: ME 341 or CE 342. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 547 Advanced Reinforced Concrete
3 credits
Composite design; slab design; limit state design; footings; retaining walls; deep beams; brackets and corbels; torsion; seismic design; shear walls. Cooperative: open to WSU degree-seeking students.
Prereq: CE 441. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 550 Experimental Methods in Fluid Dynamics
3 credits
Cross-listed with ME 551.
The objective of this course is to develop the knowledge and skills to be able to design and perform fluid dynamics experiments (and experiments in related areas) and to interpret and report the results. Learn the words, the concepts, and experimental skills in areas including dimensional analysis and scaling of experiments, flow visualization, velocity and flow rate measurements, turbulence measurements, and sediment sizing and transport measurements. Additional projects/assignments reqd for grad cr. One 1-1/2 hr lec and one 3-hr lab a wk. Recommended Preparation: ENGL 317 and ENGR 335.

CE 554 Environmental Hydrodynamics
3 credtis
The course analyzes solute transport and mixing in rivers. It provides the derivation and analysis of the equations governing solute mixing and transport and shows the connection between mixing and flow field. It presents molecular and turbulent diffusion, dispersion, vertical, lateral, and longitudinal mixing, and the effects of river irregularities and curved channels. The course includes individual projects.
Prereq: CE 428 or permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 556 Properties of Highway Pavement Materials
3 credits
Physical and mechanical properties of asphalt and Portland cement concrete materials; design of asphalt concrete mixes; introduction to viscoelastic theory; characterization methods, emphasizing fatigue, rutting and thermal cracking; modification and upgrading techniques. Three 1-hr lec a wk and variable number of lab hrs for demonstration. Cooperative: open to WSU degree-seeking students.
Prereq: CE 357 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 561 Engineering Properties of Soils
3 credits
Physical properties, compressibility and consolidation, shear strength, compaction, saturated and unsaturated soils, laboratory and field methods of measurement, relations of physical and engineering properties, introduction to critical-state soil mechanics. Cooperative: open to WSU degree-seeking students.
Prereq: CE 360. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 562 Advanced Foundation Engineering
3 credtis
Interpretation of in-situ tests for foundation design parameters, bearing capacity and settlement of axially loaded piles, pile groups, and drilled shafts, pile dynamics, laterally loaded deep foundations, downdrag and uplift of deep foundations, foundation load and integrity testing methods and data interpretation, mat foundations. Cooperative: open to WSU degree-seeking students.
Prereq: CE 360 or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 563 Seepage and Slope Stability
3 credits
Cross-listed with GEOE 535.
Principles governing the flow of water through soils; mechanics of stability analysis of slopes, landslides, and embankments for soil and rock masses; probabilistic analyses; stabilization methods. Cooperative: open to WSU degree-seeking students. (Alt/even yrs, Spring only)
Prereq: CE 360 or GEOE 436; or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 566 Geotechnical Earthquake Engineering
3 credits
Faulting and seismicity; site response analysis; probabilistic seismic hazard assessment; dynamic soil properties; influence of soil on ground shaking; response spectra; soil liquefaction; seismic earth pressures; seismic slope stability; earthquake resistant design. Cooperative: open to WSU degree-seeking students.
Prereq: CE 360 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 571 Traffic Flow Theory
3 credits
Introduction to elements of traffic flow theory including principles of traffic stream characteristics, capacity, queuing theory, and shock waves; application of traffic flow theory to freeway and arterial traffic flow problems. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: Permission.

CE 572 Intersection Traffic Operations
3 credits
Application of traffic simulation models to the design and operations of traffic facilities, including intersection, arterials; assessment and design of traffic signal timing strategies. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: Permission.

CE 573 Transportation Planning
3 credits
Concepts and methods of transportation planning, including network modeling, travel demand forecasting, and systems evaluation of multi-modal transportation systems. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: Permission.

CE 574 Public Transportation
3 credits
Concepts and principles of planning and operations of public transportation systems, including bus transit, rail transit, and paratransit modes. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: Permission.

CE 575 Advanced Pavement Design and Analysis
3 credits
Design of new and rehabilitated asphalt and Portland cement concrete pavements; mechanistic-empirical design procedures; performance models; deflection-based structural analysis, overlay design, environmental effects; long-term pavement performance (LTPP), and introduction to research topics in pavement engineering. Cooperative: open to WSU degree-seeking students.
Prereq: CE 475 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 576 Highway Design and Traffic Safety
3 credits
Geometric design of highways as related to operation and safety. Analysis of highway design alternatives and control strategies with respect to accident probabilities. Statistical models for safety analysis. Accident countermeasure selection and evaluation methodology. Risk management.
Prereq: Permission.

CE 577 Pavement Preservation and Management
3 credits
This course addresses several aspects of pavement evaluation, preservation, rehabilitation, and management. The primary objective of this course is to provide the civil engineering graduate students with state-of-the-art knowledge needed to maintain our roadways in serviceable condition. The course covers different methods used to evaluate the performance of pavements, distresses in flexible and rigid pavements, project and network level pavement management, various preservation and rehabilitation techniques and selection of the appropriate approaches for preservation and rehabilitation.
Prereq: CE 475 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 578 Highway Traffic Operations
3 credits
Theory of two-lane highway and freeway operations, application of traffic simulation models for the design and operations of highway, development and assessment of freeway management and control strategies including Intelligent Transportation Systems applications, field data collection and analysis. (Alt/yrs)
Prereq: Permission.

CE 579 Simulation of Transportation Systems
3 credits
This course introduces students to the simulation of transportation systems, including the algorithms that constitute most traffic simulation models and how the models are applied to the study of real transportation problems. The course considers the fundamental issues that the transportation engineer must consider when developing and applying simulation models, the core algorithms that constitute transportation simulation models, how to build and test a simulation network, the process for validating and calibrating a simulation model, how model results should be analyzed and presented, and the process for using and the value of hardware-in-the-loop simulation.
Prereq: *Permission* .

CE 598 (s) Internship
Credit arranged.

CE 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

CE 600 Doctoral Research and Dissertation
Credit arranged.

COLLEGE OF ART & ARCHITECTURE (CAA)

CAA 105 CAA Summer Design Week
1 credit
Intensive one week experience that offers prospective students a chance to experience the world of design. Students gain a broad view of design disciplines in the College while developing graphic and design skills and building portfolios. (Summer only)

CAA 204 (s) Special Topics
Credit arranged..

CAA 321 CAA Ambassador
1 credit, max 2
Represent academic program and college at recruiting and other public events, developing skills in professional relations, leadership, communication, networking, and public speaking. Attending university and college recruiting events, visiting, high schools or community colleges, and communicating with prospective students is required.

COMMUNICATION (COMM)

COMM 101 Fundamentals of Oral Communication
2 credits
Gen Ed: Communication
Skills and techniques of effective speaking.

COMM 111 Introduction to Communication Studies
3 credits
Introduction to historical and intellectual development of the primary subfields within communication; perspectives on interrelationships among the subfields of interpersonal, small group, visual, and organizational communication; exploration of institutional character and cultural implications of each subfield; build competence as critical consumers of communication content.

COMM 150 Online Oral Communication
3 credits
Gen Ed: Oral Communication
This course provides the skills, techniques, and knowledge needed to engage in effective oral communication in online contexts.

COMM 200 (s) Seminar
Credit arranged.

COMM 203 (s) Workshop
Credit arranged
May be graded P/F.
Prereq: Permission.

COMM 204 (s) Special Topics
Credit arranged.

COMM 233 Interpersonal Communication
3 credits
Gen Ed: Social Science
Communication concepts and skills applied to relationship management; communication process, listening, self-disclosure, perception, conflict.

COMM 299 (s) Directed Study
Cr arr).

COMM 332 Communication and the Small Group
3 credits
Problem-solving methods; performing as a group leader or as a group member; small group behavior.

COMM 335 Intercultural Communication
3 credits
Gen Ed: Social Science, International
Survey of current theories and research on intercultural communication; development of critical thinking skills in regard to intercultural interaction and communication styles.

COMM 340 Family Communication
3 credits
This course provides an overview of family communication theories and applications by examining functional and dysfunctional family communication patterns and relationships, diverse family systems, roles and rules in the family, and power dynamics.

COMM 347 Persuasion
3 credits
Persuasive communication principles as they guide social interactions and persuasive dialogue.

COMM 355 Organizational Communication
3 credits
Overview of current theory and research in organizational communication; examining organizational structure, organizational culture, leadership, organizational change, management systems and power relationships.

COMM 359 Communication Research Methods
3 credits
Aims and methods of quantitative and qualitative research designs used by communication scholars.
Prereq: STAT 251 or PSYC 215.

COMM 400 (s) Seminar
Credit arranged.

COMM 403 (s) Workshop
Credit arranged
May be graded P/F.
Prereq: Permission.

COMM 404 (s) Special Topics
Credit arranged.

COMM 410 Conflict Management
3 credits
Gen Ed: Social Science
Principles of effective conflict management in various settings; emphasis on styles of conflict, power, goals, strategies and intervention techniques as well as negotiation in the conflict process. Recommended Preparation: COMM 233.

COMM 431 Applied Business and Professional Communication
3 credits
Principles, skills development, and practical applications of public communication within business and other organizational contexts; emphasis on using media for creating business presentations and on the role of effective communication in career management and civic and community development. Recommended Preparation: COMM 101 or COMM 150.

COMM 432 Gender and Communication
3 credits
Gen Ed: American Diversity
The nature of interpersonal communication and gender; identification, interpretation, and analyses of theories that offer explanations of gender and culture in interpersonal interactions. (Alt/yrs)

COMM 453 Communication Theory
3 credits
Gen Ed: Senior Experience
A survey of established theories and theoretical traditions in the Communication discipline, with an emphasis on understanding how theory is developed and applied to solve real world problems.
Prereq: Communication major, Junior standing .

COMM 455 Communication Research Methods
3 credits
Aims and methods of quantitative and qualitative communication research.

COMM 456 Nonprofit Fundraising
3 credits
Cross-listed with JAMM 456
Explores theory and practice of fundraising for nonprofit groups. Surveys public campaigns and communication strategies, fundraising methods, ethics of fundraising, and fundraising leadership/management. Students will develop methods of evaluation for fundraising, and do so by case studies and preparation for fundraising campaigns.

COMM 491 Communication and Aging
3 credits
Gen Ed: American Diversity
A communication perspective is adopted to examine the aging process and the ability of individuals to successfully adapt to aging; issues addressed are theory, research and factors associated with communication and aging.

COMM 492 Dark Side of Communication
3 credits
Interdisciplinary study of how individuals cope with difficult, problematic, distressing, and disruptive social interaction. Topics included are the "hidden and forbidden" aspects of personal relationships that are often neglected by social scientists. Recommended Preparation: COMM 233.

COMM 494 (s) Research Experience
Credit arranged
Supervised experience in conducting communication studies research. Available topics vary depending on current faculty research interests.
Prereq: Permission .

COMM 497 Practicum in Instruction
1-3 credits, max 6
Tutoring and/or instructional services performed by advanced students under faculty supervision.
Prereq: Permission .

COMM 498 (s) Internship
1-3 credits, max arranged)
Graded P (pass)/ F (fail).
Prereq: Permission .

COMM 499 (s) Directed Study
Credit arranged.

COMMUNITY BASED LEADERSHIP (CLDR)

CLDR 360 Leadership and Community Dynamics
3 credits
This course aims to prepare students to address complex personal, organizational, and societal issues facing communities today through an exploration of traditional and contemporary leadership models, theories, and styles. Students will examine community-based problems and the role of formal and nonformal leadership in providing viable solutions for public and private domains. Designed to help students develop leadership competencies and enhance their strengths by thinking beyond role-based skills in organizational and community development.

CLDR 450 Leading People and Teams
3 credits
Cross-listed with AGED 450
This course focuses on leadership and communication in groups and teams through an exploration of team-based leadership and shared visions. Students will develop a better understanding of themselves as leaders and followers and the role of others as leaders and followers within a community. Topics include: community-based models and theories related to effective groups and teams, processes of teams, team management, relationships in teams, creating a shared mission and vision amongst members, improving and evaluating team performance, determining leadership strategies based on team dynamics, and shared leadership. Recommended preparation: AGED 251 .

CLDR 480 Change and Power in a Global Society
3 credits
This course explores models, theories, and competencies relating to change and becoming global change agents. Designed to promote an awareness and understanding of local and global issues. Students will be challenged to critically analyze barriers and constraints related to change, including: social and political influence, power dynamics, financial constraints, and complexity. Students will have the opportunity to gain perspective on the role of leadership and appropriate strategies for approaching issues with attention to stakeholders, inclusion, and cultural contexts.

COMPUTER SCIENCE (CS)

Vertically-related courses in this subject field are:

- CS 120 – CS 121.

CS 112 Computational Thinking and Problem Solving
3 credits
Gen Ed: Mathematics
CS 112 carries no credit after CS 120. Introduction to computational thinking and problem solving, including elementary computing concepts such as variables, loops, functions, lists, conditionals, concurrency, data types, simple object oriented concepts, I/O, events, syntax, structured programming, basic concepts of computer organization, editing and the influence of computers in modern society.
Prereq: MATH 108 with a grade of 'C' or better; or sufficiently high ACT, SAT, or Math Placement Test score to qualify for MATH 143 .

CS 120 Computer Science I
4 credits
Fundamental programming constructs, algorithms and problem-solving, fundamental data structures, overview of programming languages, virtual machines, introduction to language translation, declarations and types, abstraction mechanisms, object-oriented programming. This course includes a lab.
Prereq: MATH 143 with a grade of 'C' or higher or CS 112 with a grade of 'C' or higher; or sufficiently high ACT, SAT, or Math Placement Test score to qualify for MATH 170.

CS 121 Computer Science II
3 credits
Abstract data types and data structures: linked lists, stacks, queues, trees, and graphs. Methods to implement and algorithms to manipulate these structures. Dynamic memory methods, sequential file processing, additional searching and sorting algorithms, recursion, and object-oriented programming.
Prereq: CS 120 with a grade of 'C' or higher
Coreq: MATH 176 .

CS 150 Computer Organization and Architecture
3 credits
Digital logic and digital systems, Machine level representation of data, Assembly level machine organization, Memory system organization and architecture, Interfacing and communication, Functional organization, Multiprocessing and alternative architectures.
Prereq: CS 120.

CS 204 (s) Special Topics
Credit arranged.

CS 210 Programming Languages
3 credits
Major features of good programming languages, with primary emphasis on language features and their role in writing good software; programming language design alternatives; various types of languages, including procedure, data-flow, functional, and object-oriented languages.
Prereq: CS 121.

CS 240 Computer Operating Systems
3 credits
Overview of operating systems, Operating system principles, Concurrency, Scheduling and dispatch, Memory management, Introduction to net-centric computing, OS security. Process management. Concurrent programming using threads.
Prereq: CS 121 and CS 150
Coreq: CS 270.

CS 270 System Software
3 credits
Programming productivity tools such as make. Debugging tools. Linking and loading. Shell programming and scripting languages. Process management and interprocess communication. Exception handling. Network concepts and network programming.
Prereq: CS 121.

CS 298 (s) Internship
Credit arranged.

CS 299 (s) Directed Study
Credit arranged.

CS 324 Computer Graphics
3 credits
Use of the computer to define, store, manipulate, and display 2-D and 3-D objects; 2-D curvefitting and 3-D surface development. Cooperative: open to WSU degree-seeking students.
Prereq: CS 121 and MATH 330.

CS 328 Introduction to Computer Game Development
3 credits
An introduction to data structures, algorithms, and programming techniques useful in the development of computer games. Topics including 2D graphics, sound programming, user interfaces, game genres, computerization of classic board games and simulation games.
Prereq: CS 210 and CS 240 .

CS 336 Introduction to Information Assurance
3 credits
Introduces the confidentiality, availability and integrity goals of information systems; resistance, recognition and response categories of assurance. Focus on computer security and survivability, including cryptography, network security, general purpose operating system security and dependability and special purpose systems for high assurance security and dependability.
Prereq: CS 240.

CS 360 Database Systems
3 credits
Study of database design and implementation; comparison of basic models (entity-relationship, hierarchical, network, relational); study of query languages; discussion of issues of integrity, security, dependencies, and normal forms.
Prereq: CS 240 and CS 270 .

CS 383 Software Engineering
3 credits
Current topics in development of software systems; software life cycle model, requirements definition, requirements analysis, software specification, software architectural design, engineering discipline in software development, software measurement, user interface design, legal and ethical issues in software product development. Projects are developed to demonstrate application of concepts.
Prereq: CS 210, CS 240 and CS 270 or Permission.

CS 385 Theory of Computation
3 credits
Cross-listed with MATH 385.
Mathematical models of computation, including finite automata and Turing machines. (Fall only)
Prereq: Permission.

CS 395 Analysis of Algorithms
3 credits
Cross-listed with MATH 395.
Measures of efficiency; standard methods and examples in the design, implementation, and analysis of algorithms. (Spring only)
Prereq: MATH 175 and CS 121.

CS 398 (s) Computer Science Cooperative Internship
1-3 credits, max 3
Supervised internship in professional computer science settings, integrating academic study with work experience; requires formal plan of activities before co-op assignment and final written report evaluated by on-campus faculty members. Graded P/F.
Prereq: Permission.

CS 400 (s) Seminar
0 credits
Technical topics, employment practices, interviewing, and current research topics. Graded P/F. One lecture a week.
Prereq: Senior standing in CS.

CS 401 Contemporary Issues in Computer Science
1 credit
Ethical, legal, social, and intellectual property issues; current research topics; and other issues of importance to the professional computer scientist. Graded P/F.
Prereq: Senior standing in CS.

CS 404 (s) Special Topics
Credit arranged.

CS 411 Parallel Programming
3 credits
Joint-listed with CS 511
Analysis, mapping, and the application of parallel programming software to high-performance systems; the principles of spatial- and temporal-locality of data memory hierarchies in performance tuning; architectural considerations in the design and implementation of a parallel program; the tradeoff between threaded (shared memory) and message-passing (distributed memory) programming styles and performance. Additional projects/assignments required for graduate credit. Recommended Preparation: Proficiency in programming using a modern language such as C or C++.
Prereq: CS 395.

CS 415 Computational Biology: Sequence Analysis
3 credits
Joint-listed with CS 515
Design and analyze algorithms that address the computational problems posed by biological sequence data, such as DNA or protein sequences. Topics may include: comparing sequences (from genes to genomes), database searching, multiple sequence alignment, phylogenetic inferencing, gene discovery and annotation, and genome assembly. Additional class presentation and/or paper required for graduate credit.
Prereq: Knowledge of high level programming language, basic probability theory, basic molecular biology, or Permission.

CS 420 Data Communication Systems
3 credits
Joint-listed with CS 520.
Concept and terminology of data communications, equipment, protocols (including ISO/OSI and TCP/IP), architectures; transmission alternatives, regulatory issues and network management. Additional projects/assignments reqd for grad cr.
Prereq: CS 150 and CS 240 .

CS 424 Advanced Computer Graphics
3 credits
Joint-listed with CS 524.
Graphical user interfaces; rendering for realism including shading, shadows and textures; fractals; raster displays, pixmaps, and antialiasing; 3D curves and surfaces; color theory; hidden surfaces; ray tracing; games. Additional work required for graduate credit. (Spring only)
Prereq: CS 324, MATH 175 .

CS 428 Multi-User Games and Virtual Environments
3 credits
Joint-listed with CS 528.
Software design and programming issues involved in constructing multi-user computer games and virtual environments, incorporating networking and 3D graphics. Additional projects and assignments are required for graduate credit.
Prereq: *CS 210, CS 324, and CS 328* .

CS 431 (s) SFS Professional Development
3 credits
Joint-listed with CS 531.
This course is reserved for CyberCorps(R) Scholarship for Service program participants.
Prereq: Instructor Permission.

CS 438 Network Security
3 credits
Joint-listed with CS 538.
Practical topics in network security; policy and mechanism, malicious code; intrusion detection, prevention, response; cryptographic techniques for privacy and integrity; emphasis on tradeoffs between risk of misuse, cost of prevention, and societal issues; concepts implemented in programming assignments. Additional projects/assignments reqd for grad cr. Recommended Preparation: Knowledge of C or C++. Cooperative: open to WSU degree-seeking students.
Prereq: CS 336.

CS 439 Applied Security Concepts
3 credits
Joint-listed with CS 539.
Hands-on approach to computer security with emphasis on developing practical knowledge of how cyber attacks work and how to defend against them. Detailed exploration of attacks such as buffer overruns, string attacks, worms, trojan horses, and denial-of-service attacks, and development of defenses against them. Additional work reqd for grad cr. Recommended preparation: Good knowledge of C, operating system concepts and Unix.
Prereq: CS 336 or Permission.

CS 444 Supervisory Control and Critical Infrastructure Systems
1 credit
Joint-listed with CS 544. Cross-listed with ECE 444, ECE 544.
Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e.g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/yrs.)
Prereq: *Senior or Graduate standing in the College of Engineering* .

CS 445 Compiler Design
4 credits
Algorithms used by the following system software: assemblers, macro-processors, interpreters, and compilers; compiler design options and code optimization; all concepts implemented in major programming assignments.
Prereq: CS 210 and CS 385 .

CS 447 Computer and Network Forensics
3 credits
Joint-listed with CS 547
Competence in using established forensic methods in the handling of electronic evidence; rigorous audit/logging and date archival practices; prevention, detection, apprehension, and prosecution of security violators and cyber criminals; identifying and correcting computer vulnerabilities in a way that is smart, prudent, and responsible. Additional work required for graduate credit.
Prereq: CS 336 and Permission.

CS 448 Survivable Systems and Networks
3 credits
Joint-listed with CS 548
Computers and networks under malicious threat or attack. Attributes of survivability, trustworthiness, dependability and assurance. Threats to survivability, security, reliability and performance. Models and analytical methods to assess survivability, vulnerability, interdependence and risk. Systemic inadequacies and approaches for overcoming deficiencies. Literature review and case studies. Additional projects/assignments required for graduate credit. Recommended Preparation: CS 449, CS 549 or CS 438.

CS 449 Fault-Tolerant Systems
3 credits
Joint-listed with CS 549. Cross-listed with ECE 449.
Design, modeling, analysis and integration of hardware and software to achieve dependable computing systems employing on-line fault tolerance; theory and fundamental concepts of designing reliable systems; analytical evaluation techniques, faults and advances in ultra-reliable distributed systems, fault-tolerant software systems; case studies include the space Shuttle, Airbus, and Boeing fly-by-wire primary flight computers as well as systems in reliable data bases and financial markets. Additional projects and assignments reqd for grad cr.
Prereq: CS 240 or Permission.

CS 451 Advanced Computer Architecture
3 credits
Joint-listed with CS 551. Cross-listed with ECE 441, ECE 541.
Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.
Prereq: CS 150, STAT 301 or Permission.

CS 452 Real-Time Operating Systems
3 credits
Joint-listed with CS 552
Topics of interest in the implementation of Real-Time Operating Systems, especially as applicable to embedded systems, including a relevant hardware review, interrupts and interrupt handling, real-time scheduling principles and implementation, latency, task management, shared data and synchronization, timers, message passing, tradeoffs between memory space and speed. Students will build a simple but relatively complete real-time operating system over the course of the semester. Additional projects and assignments are required for graduate credit. (Spring only)
Prereq: CS 240 .

CS 453 Advanced Robotics I
3 credits
Joint-listed with CS 553
The course studies the fundamentals of robotics/mechatronics systems and associated artificial intelligence applications. Topics to be covered include: principles of distributed systems control, interfacing and signal conditioning of sensors and actuators, data acquisition and signal processing, microprocessor-based control, physical modeling, and hardware and software simulation for model validation and control.
Prereq: Instructor Permission .

CS 454 Advanced Robotics II
3 credits
Joint-listed with CS 554
The course continues the study of fundamentals of robotics/mechatronics operating systems and associated specific artificial intelligence applications in Robotics. Topics to be covered include: simulation of mixed environment robotic systems for model validation and control, interfacing and signal conditioning of sensors and actuators, and data acquisition and signal processing. Software architectures utilizing the ROS (Robotic Operating System) will be implemented and demonstrated on the appropriate physical robots and for associated remote computer-based sensors during the course.
Prereq: Instructor permission .

CS 460 Database Management Systems Design
3 credits
Joint-listed with CS 560
Theory, analysis and implementation of database architecture, security, performance, query optimization, recovery and concurrency control, reliability, integrity, commit protocols, distributed processing, deadlock detection and management. Additional projects/assignments required for graduate credits.
Prereq: *CS 360* .

CS 470 Artificial Intelligence
3 credits
Joint-listed with CS 570.
Concepts and techniques involved in artificial intelligence, Lisp, goal-directed searching, history trees, inductive and deductive reasoning, natural language processing, and learning. Extra term paper reqd for cr in CS 570.
Prereq: CS 210 .

CS 472 Evolutionary Computation
3 credits
Joint-listed with CS 572
Solving computation problems by "growing" solutions; simulates natural evolution using analogues of mutation, crossover, and other generic transformations on representations of potential solutions; standard EC techniques such as genetic algorithms and evolutionary programming, mathematical explanations of why they work, and a survey of some applications; the focus is on solving real-world problems using projects. Graduate-level research and possible paper or presentation required for grad cr.
Prereq: CS 210 .

CS 475 Machine Learning
3 credits
Joint-listed with CS 575.
Analysis and implementation of classic machine learning algorithms including neural networks, deep learning networks, principle component analysis, decision trees, support vector machines, clustering, reinforcement learning, ensemble learning, K-means, self-organizing maps and probabilistic learning such as Markov Chain Monte Carlo and Expectation Maximization algorithms. Techniques of preprocessing data, training, testing, and validating will be discussed along with statistical measures commonly used and pitfalls commonly encountered. Additional work required for graduate credit.
Prereq: CS 210 .

CS 479 Data Science
3 credits
Joint-listed with CS 579
Data science is advancing the conduct of science in individual and collaborative works. Data science combines aspects of data management, library science, computer science, and physical science using supporting cyberinfrastructure and information technology. Key methodologies in application areas based on real research experience are taught to build a skill-set that enables students to handle each stage in a data lifecycle, from data collection, analysis, archiving, to data discovery, access and reuse. Additional work required for graduate credit.
Prereq: MATH 330 or permission .

CS 480 CS Senior Capstone Design I
3 credits
Capstone design sequence for computer science majors. Formal development techniques applied to definition, design, coding, testing, and documentation of a large software project. Projects are customer-specified, includes real-world design constraints, and usually encompasses two semesters. Students work in teams. Significant lab work required.
Prereq: *CS 383, ENGL 317, and Senior standing* .

CS 481 CS Senior Capstone Design II
3 credits
Gen Ed: Senior Experience
Continuation of CS 480. Application of formal design techniques to development of a large computer science project performed by students working in teams. Significant lab work required.
Prereq: *CS 480* .

CS 499 (s) Directed Study
Credit arranged.

CS 500 Master's Research and Thesis
Credit arranged.

CS 501 (s) Seminar
Credit arranged.

CS 502 (s) Directed Study
Credit arranged.

CS 504 (s) Special Topics
Credit arranged.

CS 505 (s) Professional Development
Credit arranged.

CS 510 Programming Language Theory
3 credits
Advanced topics in programming language theory including formal syntax, formal semantics, denotational semantics, and type theory; principles of programming language design are stressed; not a comparative language class. Cooperative: open to WSU degree-seeking students.
Coreq: CS 385 or Equivalent.

CS 511 Parallel Programming
3 credits
Joint-listed with CS 411
Analysis, mapping, and the application of parallel programming software to high-performance systems; the principles of spatial- and temporal-locality of data memory hierarchies in performance tuning; architectural considerations in the design and implementation of a parallel program; the tradeoff between threaded (shared memory) and message-passing (distributed memory) programming styles and performance. Additional projects/assignments required for graduate credit. Recommended Preparation: Proficiency in programming using a modern language such as C or C++.
Prereq: CS 395.

CS 512 Parallel Algorithms
3 credits
Parallel algorithm design; formal analysis of parallel algorithmic complexity; measures of parallel efficiency; relationship between algorithmic structure and parallel mapping strategies; the consequences of spatial- and temporal-locality. Additional projects/assignments required for graduate credit.
Prereq: CS 395.

CS 515 Computational Biology: Sequence Analysis
3 credits
Joint-listed with CS 415
Design and analyze algorithms that address the computational problems posed by biological sequence data, such as DNA or protein sequences. Topics may include: comparing sequences (from genes to genomes), database searching, multiple sequence alignment, phylogenetic inferencing, gene discovery and annotation, and genome assembly. Additional class presentation and/or paper required for graduate credit.
Prereq: Knowledge of high level programming language, basic probability theory, basic molecular biology, or Permission.

CS 520 Data Communication Systems
3 credits
Joint-listed with CS 420.
Concept and terminology of data communications, equipment, protocols (including ISO/OSI and TCP/IP), architectures; transmission alternatives, regulatory issues and network management. Additional projects/assignments reqd for grad cr.
Prereq: CS 150 and CS 240 .

CS 524 Advanced Computer Graphics
3 credits
Joint-listed with CS 424.
Graphical user interfaces; rendering for realism including shading, shadows and textures; fractals; raster displays, pixmaps, and antialiasing; 3D curves and surfaces; color theory; hidden surfaces; ray tracing; games. Additional work required for graduate credit. (Spring only)
Prereq: CS 324, MATH 175 .

CS 528 Multi-User Games and Virtual Environments
3 credits
Joint-listed with CS 428.
Software design and programming issues involved in constructing multi-user computer games and virtual environments, incorporating networking and 3D graphics. Additional projects and assignments are required for graduate credit.
Prereq: *CS 210, CS 324, and CS 328* .

CS 531 (s) SFS Professional Development
3 credits, max arranged
Joint-listed with CS 431.
This course is reserved for CyberCorps(R) Scholarship for Service program participants.
Prereq: Instructor Permission .

CS 536 Advanced Information Assurance Concepts
3 credits
Advanced topics in design and analysis of network, database, and operating system security; current trends and research in mandatory and discretionary security policies. Recommended preparation: CS 336.

CS 538 Network Security
3 credits
Joint-listed with CS 438.
Practical topics in network security; policy and mechanism, malicious code; intrusion detection, prevention, response; cryptographic techniques for privacy and integrity; emphasis on tradeoffs between risk of misuse, cost of prevention, and societal issues; concepts implemented in programming assignments. Additional projects/assignments reqd for grad cr. Recommended Preparation: Knowledge of C or C++. CS 438 is a cooperative course open to WSU degree-seeking students.
Prereq: CS 336.

CS 539 Applied Security Concepts
3 credits
Joint-listed with CS 539.
Hands-on approach to computer security with emphasis on developing practical knowledge of how cyber attacks work and how to defend against them. Detailed exploration of attacks such as buffer overruns, string attacks, worms, trojan horses, and denial-of-service attacks, and development of defenses against them. Additional work reqd for grad cr. Recommended preparation: Good knowledge of C, operating system concepts and Unix.
Prereq: CS 336 or Permission.

CS 541 Advanced Operating Systems
3 credits
Principles of contemporary operating systems for network and distributed computer systems; sequential processes, scheduling, process synchronization, device management, file systems, memory management, and protection and security. Additional work required for graduate credit.
Prereq: CS 240.

CS 543 Embedded Systems
3 credits
Joint-listed with CS 543
Interfacing to an embedded system processor. Development of the processor's hardware-software interface. Application software development. Use of C and assembly language in device driver design, monitor-debugger, and real-time kernel. Regular laboratory assignments. (Fall only)
Prereq: CS 383 .

CS 544 Control and Crit Infra Systems
1 credit
Joint-listed with CS 444. Cross-listed with ECE 444, ECE 544.
Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e.g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/yrs.)
Prereq: *Senior or Graduate standing in the College of Engineering* .

CS 547 Computer and Network Forensics
3 credits
Joint-listed with CS 447
Competence in using established forensic methods in the handling of electronic evidence; rigorous audit/logging and date archival practices; prevention, detection, apprehension, and prosecution of security violators and cyber criminals; identifying and correcting computer vulnerabilities in a way that is smart, prudent, and responsible. Additional work required for graduate credit.
Prereq: CS 336 and Permission.

CS 548 Survivable Systems and Networks
3 credits
Joint-listed with CS 448
Computers and networks under malicious threat or attack. Attributes of survivability, trustworthiness, dependability and assurance. Threats to survivability, security, reliability and performance. Models and analytical methods to assess survivability, vulnerability, interdependence and risk. Systemic inadequacies and approaches for overcoming deficiencies. Literature review and case studies. Additional projects/assignments required for graduate credit. Recommended Preparation: CS 449, CS 549 or CS 438.

CS 549 Fault/Tolerant Systems
3 credits
Joint-listed with CS 449. Cross-listed wtih ECE 449.
Design, modeling, analysis and integration of hardware and software to achieve dependable computing systems employing on-line fault tolerance; theory and fundamental concepts of designing reliable systems; analytical evaluation techniques, faults and advances in ultra-reliable distributed systems, fault-tolerant software systems; case studies include the space Shuttle, Airbus, and Boeing fly-by-wire primary flight computers as well as systems in reliable data bases and financial markets. Additional projects and assignments reqd for grad cr.
Prereq: CS 240 or Permission.

CS 551 Advanced Computer Architecture
3 credits
Joint-listed with CS 551. Cross-listed with ECE 441, ECE 541.
Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.
Prereq: CS 150, STAT 301 or Permission.

CS 552 Real Time Operating Systems
3 credits
Joint-listed with CS 452
Topics of interest in the implementation of Real-Time Operating Systems, especially as applicable to embedded systems, including a relevant hardware review, interrupts and interrupt handling, real-time scheduling principles and implementation, latency, task management, shared data and synchronization, timers, message passing, tradeoffs between memory space and speed. Students will build a simple but relatively complete real-time operating system over the course of the semester. Additional projects and assignments are required for graduate credit. (Spring only)
Prereq: CS 240 .

CS 553 Advanced Robotics I
3 credits
Joint-listed with CS 453
The course studies the fundamentals of robotics/mechatronics systems and associated artificial intelligence applications. Topics to be covered include: principles of distributed systems control, interfacing and signal conditioning of sensors and actuators, data acquisition and signal processing, microprocessor-based control, physical modeling, and hardware and software simulation for model validation and control.
Prereq: Instructor's Permission .

CS 554 Advanced Robotics II
3 credits
Joint-listed with CS 454 The course continues the study of fundamentals of robotics/mechatronics operating systems and associated specific artificial intelligence applications in Robotics. Topics to be covered include: simulation of mixed environment robotic systems for model validation and control, interfacing and signal conditioning of sensors and actuators, and data acquisition and signal processing. Software architectures utilizing the ROS (Robotic Operating System) will be implemented and demonstrated on the appropriate physical robots and for associated remote computer-based sensors during the course.
Prereq: Instructor permission .

CS 560 Database Management Systems Design
3 credits
Joint-listed with CS 460
Theory, analysis and implementation of database architecture, security, performance, query optimization, recovery and concurrency control, reliability, integrity, commit protocols, distributed processing, deadlock detection and management. Additional projects/assignments required for graduate credits.
Prereq: *CS 360* .

CS 570 Artificial Intelligence
3 credits
Joint-listed with CS 470.
Concepts and techniques involved in artificial intelligence, Lisp, goal-directed searching, history trees, inductive and deductive reasoning, natural language processing, and learning. Extra term paper reqd for cr in CS 570.
Prereq: CS 210 .

CS 572 Evolutionary Computation
3 credits
Joint-listed with CS 472
Solving computation problems by "growing" solutions; simulates natural evolution using analogues of mutation, crossover, and other generic transformations on representations of potential solutions; standard EC techniques such as genetic algorithms and evolutionary programming, mathematical explanations of why they work, and a survey of some applications; the focus is on solving real-world problems using projects. Graduate-level research and possible paper or presentation required for grad cr.
Prereq: CS 210 .

CS 575 Machine Learning
3 credits
Joint-listed with CS 475.
Analysis and implementation of classic machine learning algorithms including neural networks, deep learning networks, principle component analysis, decision trees, support vector machines, clustering, reinforcement learning, ensemble learning, K-means, self-organizing maps and probabilistic learning such as Markov Chain Monte Carlo and Expectation Maximization algorithms. Techniques of preprocessing data, training, testing, and validating will be discussed along with statistical measures commonly used and pitfalls commonly encountered. Additional work required for graduate credit.
Prereq: CS 210 .

CS 578 Neural Network Design
3 credits
Cross-listed with ECE 578 and ME 578.
Introduction to neural networks and problems that can be solved by their application; introduction of basic neural network architectures; learning rules are developed for training these architectures to perform useful functions; various training techniques employing the learning rules discussed and applied; neural networks used to solve pattern recognition and control system problems.
Prereq: Permission.

CS 579 Data Science
3 credits
Joint-listed with CS 479
Data science is advancing the conduct of science in individual and collaborative works. Data science combines aspects of data management, library science, computer science, and physical science using supporting cyberinfrastructure and information technology. Key methodologies in application areas based on real research experience are taught to build a skill-set that enables students to handle each stage in a data lifecycle, from data collection, analysis, archiving, to data discovery, access and reuse. Additional work required for graduate credit.
Prereq: MATH 330 or permission .

CS 580 Graduate Project
1-6 credits, max 6)
Application of formal design and documentation techniques to the development of computer programming project; project selected in consultation with student's major professor.
Prereq: CS 383, CS 480 or Permission.

CS 598 (s) Internship
Credit arranged.

CS 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation. (There is a limit on the number of credits in 599 that can be included on a study plan.)
Prereq: Permission.

CS 600 Doctoral Research and Dissertation
Credit arranged.

CORE SCIENCE (CORS)

CORS 205-297 Integrated Science
Credit arranged
Gen Ed: Natural and Applied Sciences
An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

DANCE (DAN)

DAN 100 Dance in Society
3 credits
Gen Ed: Humanities, American Diversity
Introduction to dance as an art form, as entertainment, and as a lifelong activity; emphasis on appreciation and understanding of movement as an expression of human values, genres and historical styles, factors affecting change, current issues.

DAN 101 Dance Seminar
1 credit
Introductory seminar course supports student transitions to dance at the university level. (Fall Only)
Prereq: Major or minor in Dance .

DAN 105 (s) Dance
1 credit, max arranged
Dance activity classes for all university students (modern, ballet, hip hop, jazz, tap, and a variety of social dance: ballroom, Latin dance, swing, country western, etc.). Courses above a beginning level may require placement session or assessment by instructor to determine the correct course level. Two-three hours per week. Pass/Fail. Cooperative: open to WSU degree-seeking students.

DAN 116 (s) Technique
1 credit, max arranged)
Joint-listed with DAN 216, DAN 416 and DAN 516
Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with 216 or 416 courses. Additional requirements for 216/416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (116, 216, 416, and 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 200 (s) Seminar
Credit arranged.

DAN 203 (s) Workshop
Credit arranged.

DAN 204 (s) Special Topics
Credit arranged.

DAN 210 Dance Performance
1-2 credits, max 12
Open to all students by audition. Performance in advanced student choreography in formal performance; Choreography Lab (fall alt.) and Dancers, Drummers, Dreamers (spring). Dance styles may include modern, jazz, ballet, tap. Company class plus additional weekly rehearsals and production tasks lead to performance. Variable credit dependent on number of choreographic work commitments, maximum of 2 works (1 cr per work). See class schedule for audition dates. Recommended Preparation: dance experience.
Coreq: DAN 105 or DAN 216 or DAN 416 .

DAN 211 Dance Conditioning
1 credit, max 2
Learn and apply current conditioning and cross-training tools and practices designed to support the training of the 21st century dancer. Students can expect to learn more about the dancing body with anatomical references, individuals needs to support a long and healthy dance career, general fitness components, and current trends in dance conditioning.

DAN 216 (s) Technique
1 credit, max arranged
Joint-listed with DAN 116, DAN 416 and DAN 516
Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with 216 or 416 courses. Additional requirements for 216/416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (116, 216, 416, and 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 284 Dance Improvisation
1 credit
Exploration of movement potential through creative play and spontaneous problem solving. Course designed to enhance self-awareness and ability to react and make choices. Emphasizes improvisation as a mode of performance and as a tool for dance movement creation. Open to all students.

DAN 299 (s) Directed Study
Credit arranged.

DAN 321 Dance Pedagogy
3 credits
Learning styles, teaching styles, and behaviors as they affect teaching and learning in dance; science of dance training.(Alt/yrs)

DAN 324 Integrated Movement Practices
3 credits
Joint-listed with DAN 524
This course aims to enhance anatomical knowledge and experiential understanding of the body with specific applications to dance and other movement practices. Anatomical terminology will be studied and applied to movement explorations in the dance studio laboratory setting, frequently utilizing methodologies found in somatic practices. Students will be expected to engage deeply and personally with course material. Those taking the course for graduate credit will be expected to complete an additional specialized research paper and presentation. (Alt/yrs)

DAN 360 Teaching Creative Dance for Children
1 credit
Basic principles and techniques rooted in developmental movement patterns for teaching dance in early childhood through middle school age children and integrating creative movement and dance into the curriculum and other course subjects; emphasis on content, methods, and resource material. As a service learning based course, students will complete a practicum project in the local school district. Lecture and lab are integrated in class, once a week.
Prereq: EDCI 301 or MVSC 201 or permission
Coreq: EDCI 320 and EDCI 322 and EDCI 325 and EDCI 409; or permission .

DAN 384 Dance Composition I
3 credits
Study of fundamental elements of dance composition and application of improvisation skills to movement creation. Additional movement research projects/assignments for graduate students will be individually directed and determined with instructor guidance. Majors and minors have priority, non-majors/minors may take the course by instructor permission. (Spring only)
Prereq: DAN 284.

DAN 385 Dance Composition II
3 credits
Intermediate to advanced exploration of choreographic procedures and performance. (Fall, Alt/yrs)
Prereq: DAN 284 and DAN 384 .

DAN 400 (s) Seminar
Credits arranged.

DAN 403 (s) Workshop
Credit arranged.

DAN 404 (s) Special Topics
Credit arranged.

DAN 410 Pre-professional Dance Performance
1-3 credits, max 12
All students may audition for faculty choreographed and formally produced work; casting priority given to majors and minors. Focus is placed on involvement in the rehearsal and choreographic process. Regular weekly rehearsals required in addition to involvement in company production needs and technical rehearsals. Variable credit dependent on number of choreographic work commitments, maximum of 3 works (1 credit per work). See class schedule for audition dates.
Prereq: Two semesters of DAN 210; or Permission
Coreq: Minimum of two DAN 216 or DAN 416 courses .

DAN 412 Choreography Lab
2 credits, max 6
Independent work on advanced levels of choreography leading to formally produced concerts. Develop and refine practical skills as well as personal approaches to choreographic process. Practice leadership in rehearsal direction and production management (Every Spring; Fall Alt/yrs)
Prereq: DAN 284, DAN 384 and DAN 385 .

DAN 416 (s) Technique
1 credit, max arranged)
Joint-listed with DAN 116, DAN 216 and DAN 516
Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with 216 or 416 courses. Additional requirements for 216/416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (116, 216, 416, and 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 421 Dance History and Contemporary Views
3 credits
Development of dance as a performing art from lineage-based to contemporary styles building upon course topics covered in Dance in Society, Dan 100. Emphasis will be placed on 20th and 21st century developments in dance with a focus on ballet and modern. Students registering for graduate credit are required to complete additional research paper make two substantial presentations synthesizing overriding concepts within a historical concept. (Alt/yrs)
Prereq: DAN 100 .

DAN 422 Labanalysis
3 credits
Joint-listed with DAN 522
An exploration of movement concepts based on Rudolf Laban¿s principles of Efforts, Shape, and Space. Additional projects/assignments will be included for graduate students. (Spring, Alt/yrs)

DAN 490 Senior Project
2 credits
Open-ended projects representing the capstone of the student's work, consistent with the chosen emphasis within the dance degree (e.g., concerts of original work, a major choreographic work, major performance, teaching or research projects).
Prereq: Senior standing and Major in Dance .

DAN 495 (s) Practicum In Tutoring
1 credit, max 2
Tutorial services performed by advanced students under faculty supervision. Graded P/F.
Prereq: Permission.

DAN 499 (s) Directed Study
Credit arranged.

DAN 502 (s) Directed Study
Credit arranged.

DAN 503 (s) Workshop
Credit arranged.

DAN 504 (s) Special Topics
Credit arranged.

DAN 505 (s) Professional Development
Credit arranged.

DAN 516 (s) Technique
1 credit, max arranged)
Joint-listed with DAN 116, DAN 216 and DAN 416
Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with 216 or 416 courses. Additional requirements for 216/416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (116, 216, 416, and 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 524 Integrated Movement Practices
3 credits
Joint-listed with DAN 324
This course aims to enhance anatomical knowledge and experiential understanding of the body with specific applications to dance and other movement practices. Anatomical terminology will be studied and applied to movement explorations in the dance studio laboratory setting, frequently utilizing methodologies found in somatic practices. Students will be expected to engage deeply and personally with course material. Those taking the course for graduate credit will be expected to complete an additional specialized research paper and presentation. (Alt/yrs)

ECONOMICS (ECON)

Notes: No course (CBE or outside the college) that is required in a CBE student's curriculum may be taken by CBE undergraduates on a P/F basis, with the exception of courses that are taught only on a P/F basis. Only upper-division CBE courses used as free electives may be taken by CBE undergraduates on a P/F basis.

The combination of credits for ECON 201, ECON 202, and ECON 272 may not exceed 6 credits.

Prerequisite: Enrollment in 300- and 400-level economics courses is restricted to students who have completed at least 58 credits. In addition, CBE students must have earned at least a 2.4 GPA in the CBE predictor courses. Students who have not completed the prerequisites to a course for which they are otherwise eligible may register for the course with the instructor's approval.

ECON 201 Principles of Macroeconomics
3 credits
Gen Ed: Social Science
ECON 201 and ECON 202 may be taken in either order. Organization and operation of American economy; supply and demand, money and banking, macroeconomic analysis of employment, aggregate output and inflation, public finance, and economic growth. ECON 201 or ECON 202 carry only two credits after ECON 272. May involve some evening exams.

ECON 202 Principles of Microeconomics
3 credits
Gen Ed: Social Science
ECON 201 and ECON 202 may be taken in either order. Microeconomic principles governing production, price relationships, and income distribution. ECON 201 or ECON 202 carry only two credits after ECON 272. May involve some evening exams.

ECON 204 (s) Special Topics
Credits arranged).

ECON 272 Foundations of Economic Analysis
4 credits
Gen Ed: Social Science
One-semester introductory course on the principles of economics, covering both micro- and macro- concepts, theory, analysis, and applications. May involve evening exams. Carries no credit after ECON 201 and ECON 202; carries 3 credits after either ECON 201 or ECON 202. Students who have successfully completed this course, have not completed ECON 340, and later decide to major in economics are required, in consultation with the advisor, to take either ECON 201 or ECON 202 for 2 credits.

ECON 298 (s) Internship
Credits arranged.

ECON 299 (s) Directed Study
Credits arranged.

ECON 340 Managerial Economics
3 credits
May only be repeated once. Student may petition to repeat a second time in consultation with the Dean and course faculty team. This course covers the fundamental economic principles in applied business decisions from both micro and macroeconomic perspectives.
Prereq: ECON 201 and ECON 202, or ECON 272 .

ECON 343 Money and Banking
3 credits
Influence of money and banking on economic activity; influence of monetary policies to achieve society's economic goals. May include evening exams.
Prereq: ECON 201 and ECON 202, or ECON 272.

ECON 351 Intermediate Macroeconomic Analysis
3 credits
Theory of the economy as a whole; national income accounting as a tool of analysis; national output and income, employment, price levels, and growth. May include evening exams.
Prereq: ECON 201 and ECON 202, or ECON 272, or Permission.

ECON 352 Intermediate Microeconomic Analysis
3 credits
Theory of the consumer, firm, industry, market, price determination, and allocation of productive resources.
Prereq: ECON 201 and ECON 202, or ECON 272 or Permission .

ECON 385 Environmental Economics
3 credits
Cross-listed with AGEC 385
Theory of externalities and public goods, and application of economic principles to environmental issues.
Prereq: ECON 202 or ECON 272 or Permission .

ECON 398 (s) Economics Internship Program
1-3 credits, max 6)
Enrollment restricted to economics majors; may not be used to fulfill upper-division economics requirement in any of the three economics degree programs. Graded P/F. Relevant learning experience in business and government.
Prereq: Permission.

ECON 400 (s) Seminar
Credit arranged.

ECON 404 (s) Special Topics
Credit arranged.

ECON 407 Public Finance
3 credits
Role of government in a market economy; public choice and collective decision-making; tax-shifting and incidence; structure and economics of federal taxes; governmental budgeting; public debt; special topics.
Prereq: ECON 201 and ECON 202, or ECON 272 .

ECON 415 Market Structure and Governmental Policy
3 credits
Analysis of economic behavior under different market structures, e.g., competition, monopoly, oligopoly, monopsony, oligopsony, bilateral monopoly and cartels; theory of contestable markets; antitrust; regulation; selected case studies.
Prereq: ECON 202 or ECON 272 or Permission.

ECON 441 Labor Economics
3 credits
Structure and composition of the labor force, wages and employment, human resources, income-maintenance program, and related policy issues.
Prereq: ECON 201 and ECON 202, or ECON 272.

ECON 446 International Economics
3 credits
Gen Ed: International
Analysis of international trade and financial transactions; trade policy; foreign exchange markets; adjustment processes; and international monetary system. May include evening exams.
Prereq: ECON 201 and ECON 202, or ECON 272 .

ECON 447 International Development Economics
3 credits
Gen Ed: International
Same as AGEC 447 and LAS 447. Characteristics of development; historical perspective; macroeconomic theories and policies: models of growth, poverty, inequality, trade, aid and debt; microeconomic theories and policy: health, nutrition and education, agriculture, rural markets for land, labor and credit, and corruption
Prereq: ECON 201 and ECON 202, or ECON 272, or Permission .

ECON 453 Econometrics
3 Credits
Cross-listed with STAT 433
Application of statistical methods to economics and business studies; emphasis on regression analysis methods.
Prereq: STAT 251 or STAT 301.

ECON 490 Economic Theory and Policy
3 credits
Gen Ed: Senior Experience
A capstone course for economics majors. Integrates theory, quantitative methods, and policy in the economics major; will involve independent research projects.
Prereq: ECON 351, ECON 352, and ECON 453 .

ECON 499 (s) Directed Study
Credit arranged.

ECON 500 Master's Research and Thesis
Credit arranged.

ECON 501 (s) Seminar
Credit arranged.

ECON 502 (s) Directed Study
Credit arranged.

ECON 504 (s) Special Topics
Credit arranged.

ECON 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ED-CURRICULUM & INSTRUCTION (EDCI)

EDCI 200 (s) Seminar
Credit arranged.

EDCI 201 Contexts of Education
3 credits
Gen Ed: Social Science
Joint-listed with EDCI 550
Introduction to the philosophical, social, cultural, historical, legal and political contexts of schooling. Develops an understanding of the sources of curriculum, standards, and assessments. Explores what it means to become a successful teacher committed to student success through the development of observation and analysis skills. Requires additional 20 hours of service learning.

EDCI 203 (s) Workshop
Credit arranged.

EDCI 204 (s) Special Topics
Credit arranged.

EDCI 298 (s) Internship
Credit arranged.

EDCI 299 (s) Directed Study
Credit arranged
Graded P/F.
Prereq: Permission.

EDCI 301 Lrng, Dvlpmnt, & Assessment
3 credits
Gen Ed: Social Science
Joint-listed with EDCI 543
Exploration of theories of learning and human development and the use of this knowledge to support student success in classroom settings. Provides a practical understanding of motivation as a classroom management tool. Develops a fundamental understanding of assessment terminology; the uses of assessment and its relationship to student success.

EDCI 302 Teaching Culturally Diverse Learners
3 credits
Gen Ed: American Diversity
Joint-listed with EDCI 544
An examination of cultural and linguistic diversity in classrooms. Explores strategies for creating the culturally inclusive classroom that values diversity and supports student success. Examines the use of instructional planning as a tool for motivation and classroom management. Includes required field experiences.
Prereq: EDCI 301 or FCS 234; and admission to teacher education program.

EDCI 320 Teaching Reading and Literacy
3 credits
Foundations of literacy and the methods and strategies involved in the teaching of reading. Topics include: phonological awareness, phonemic awareness, and phonics; vocabulary; fluency; comprehension.
Prereq: EDCI 302 or Permission
Coreq: EDCI 322, EDCI 325, EDCI 409 and DAN 360; or Permission .

EDCI 321 Literature for Children
3 credits
Specific methods, research, curricula, and technology in teaching Children¿s Literature for diverse populations. Facilitating of understanding content, curriculum, methods and assessment in an integrated setting.
Prereq: EDCI 302 or Permission .

EDCI 322 Teaching Writing/Language Arts
3 credits
Teaching communication, including listening and speaking, and the teaching and evaluation of writing. Topics include principles, problems, methods, and strategies for promoting the ability to communicate with an emphasis on the development of the writer. Other topics include vocabulary; spelling; grammar; fluency.
Prereq: EDCI 302 or Permission
Coreq: EDCI 320, EDCI 325, EDCI 409, and DAN 360; or Permission .

EDCI 325 Elementary Art Education
3 credits
Specific methods, research, curricula, and technology in teaching elementary art for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.
Prereq: EDCI 302 or Permission
Coreq: EDCI 320, EDCI 322, EDCI 409, and DAN 360; or Permission .

EDCI 327 Elementary Math Education
3 credits
Specific methods, research, curricula, and technology in teaching elementary mathematics for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.
Prereq: EDCI 302 and MTHE 235 and MATH 236 or MTHE 301; or Permission
Coreq: EDCI 328, EDCI 329, EDCI 408 and EDCI 410; or Permission.

EDCI 328 Elementary Social Studies Educ
3 credits
Specific methods, research, curricula, and technology in teaching elementary social studies for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.
Prereq: EDCI 302 or Permission
Coreq: EDCI 327, EDCI 329, EDCI 408 and EDCI 410; or Permission .

EDCI 329 Elementary Science Educatn
3 credits
Specific methods, research, curricula, and technology in teaching elementary science for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.
Prereq: EDCI 302 or Permission
Coreq: EDCI 327, EDCI 328, EDCI 408 and EDCI 410; or Permission .

EDCI 400 (s) Seminar
Credit arranged.

EDCI 401 Internship Seminar
1 credit
Gen Ed: Senior Experience
A review of the professional commitments and responsibilities and the interactions and partnerships that support student learning and well-being.
Coreq: EDCI 483, EDCI 484, EDCI 485, CTE 484, AGED 460, MUST 432, or PEP 484; or Permission .

EDCI 402 Practicum
Credit arranged.

EDCI 403 (s) Workshop
Credit arranged.

EDCI 404 (s) Special Topics
Credit arranged.

EDCI 405 (s) Professional Development
Credit arranged
Joint-listed with EDCI 505
Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

EDCI 408 Integrated Methods Practicum I
1 credit
Implementation of mathematics/science/social studies methods, research, curricula, and technology in elementary classrooms. Course will include 30 hours in K-8 classrooms and 15 hours of associated scheduled activities.
Prereq: EDCI 302 or Permission
Coreq: EDCI 327, EDCI 328, EDCI 329 and EDCI 410; or Permission .

EDCI 409 Integrated Methods Practicum II
1 credit
Implementation of literacy and arts methods, research, curricula, and technology in elementary classrooms. Course will include 30 hours in K-8 classrooms and 15 hours of associated scheduled activities.
Prereq: EDCI 302 or Permission
Coreq: EDCI 320, EDCI 322, EDCI 325, and DAN 360; or Permission .

EDCI 410 Technology, Teaching and Learning
2 credits
Joint-listed with EDCI 545
Specific methods, research, and strategies providing proficiency in relevant technology skills and practices to enhance classroom management and instruction. Recommended coreq in Elementary Education Program only EDCI 327, EDCI 328, EDCI 329 and EDCI 408.
Prereq or Coreq: EDCI 302 or Permission .

EDCI 411 Geometry, Measurement, and Trigonometry
3 credits
Examines topics in measurement, geometry, and trigonometry and the way that grade 5-10 students develop an understanding of these ideas. Emphasis will be placed on recent and seminal research on learning and teaching geometry to develop mathematical practice as described in CCSS-M, especially for topics such as symmetry, congruence and similarity, right triangle trigonometry, transformations, unit, and partitioning of space. Particular emphasis will be placed on extended tasks that expose learners to investigation, conjecture, argumentation, and incorporating dynamic software. Does not count toward mathematics MAT or MS graduate programs.
Preq: MTHE 236 and admission to Teacher Education; or instructor permission.

EDCI 413 Data Analysis and Probability
3 credits
Examines the understandings that are foundational to probability and data analysis, and how grade 5-10 students develop these ideas. Topics include experimental and theoretical probability, sample space, independent and dependent events, measures of central tendency and spread, and data representations. Emphasis will be on proof and argumentation and modeling with mathematics to draw conclusions, on the specialized mathematics knowledge for teaching, and how engagement in this content exemplifies the mathematical practices expressed in CCSS-M.

EDCI 416 Proportional and Algebraic Reasoning
3 credits
This course examines topics related to the development and application of reasoning with proportional quantities, and how students develop an understanding of these, application of rational number and operations, and how grade 5-10 students develop algebraic reasoning from arithmetic thinking, by abstracting from computation and working with generalized numbers. Topics include comparison, ratio, proportion, rate, equality and relational thinking, generalizing, patterns, and modeling. Emphasis will be on modeling with mathematics to analyze problems, reasoning abstractly and quantitatively, looking for and making sense of structure, proof and argumentation, the specialized mathematics knowledge needed for teaching these topics, and on how engagement in this content exemplifies the mathematical practices expressed in CCSS-M.

EDCI 418 Culturally Responsive Pedagogy
1 credit
This course provides a general introduction to the principles of Culturally Relevant Pedagogy. In particular, this module will help students attain a high level of cultural competence, social justice, and diversity such that they can apply this knowledge to lesson planning, pedagogy, and engagement with diverse learners. It will also equip future instructors to work with parents, families, and communities from diverse cultural and linguistic backgrounds.

EDCI 420 Gender and Sexual Diversity in Schools
1 credit
This course provides future instructors with the skills needed to critically and sensitively work with gender non-conforming, gay, lesbian, and bisexual students in schools. It will provide those enrolled with a basic understanding of the ways that such students have been and continue to be marginalized within traditional education, the rights of students and communities re: schools, and best practices for working with and empowering gender non-conforming, gay, lesbian, and bisexual students in schools.

EDCI 421 Racial and Ethnic Diversity in Schools
1 credit
This course provides future instructors with the skills needed to critically and sensitively work with students of color in schools. It will provide those enrolled with a basic understanding of the ways that students of color have been and continue to be marginalized within traditional education, the rights of students and communities re: schools, and best practices for working with and empowering students of color in schools.

EDCI 422 Socio-Economic Diversity in Rural Schools
1 credit
This course provides future instructors with the skills needed to critically and sensitively work with low-income students from rural communities. It will provide those enrolled with a basic understanding of the ways that such students have been and continue to be marginalized within traditional education, the rights of students and communities re: schools, and best practices for working with and empowering low-income students from rural communities.

EDCI 424 Universal Design in Learning
1 credit
This course provides a general introduction to the principles of Universal Design in Learning. It will introduce the principles, guidelines, and checkpoints that are included in the framework. It will focus on the importance of intentional, systematic and flexible design of instruction in which ALL students are included and making progress in learning.

EDCI 426 Working with Native American Students and Communities
1 credit
This course provides future instructors with the skills needed to critically and sensitively work with Native American students and communities. It will provide those enrolled with a basic understanding of the ways that Native students have been marginalized within traditional education, the rights of Native students and communities re: schools, and best practices for working with and empowering Native students in schools.

EDCI 431 Secondary English Methods
3 credits
Specific methods, research, curricula, and media in teaching Secondary English Methods. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 441 .

EDCI 432 Secondary Social Studies Methods
3 credits
Specific methods, research, curricula, and media in teaching Secondary Social Studies Methods. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 442 .

EDCI 433 Secondary Science Methods
3 credits
Specific methods, research, curricula, and media in teaching Secondary Science Methods. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 443 .

EDCI 434 Secondary Mathematics Methods
3 credits
Specific methods, research, curricula, and media in teaching Secondary Mathematics Methods. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 454 .

EDCI 436 Secondary Art Methods
3 credits
Specific methods, research, curricula, and media in teaching Secondary Art Methods. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 446 .

EDCI 437 Secondary Foreign Language Methods
3 credits
Specific methods, research, curricula, and media in teaching Secondary Foreign Language.
Prereq: EDCI 302 or Permission
Coreq: EDCI 447 .

EDCI 441 Secondary English Practicum
1 credit
Implementation of Secondary English methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 431 .

EDCI 442 Secondary Social Studies Methods Practicum
1 credit
Implementation of secondary social studies methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 432 .

EDCI 443 Secondary Science Methods Practicum
1 credit
Implementation of secondary science language methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 433 .

EDCI 445 Literature for Adolescents
3 credits
Cross-listed with ENGL 445
Theory and practice of literature study in secondary schools and appraisal of literature appropriate to the needs, interests, and abilities of adolescents.
Prereq: Engl 102; and enrollment in a program leading to certification in secondary English or Elementary Education (elementary education majors must have completed 6 cr of literature and EDCI 321; students in secondary education programs must have completed 9 cr of literature); or Permission .

EDCI 446 Secondary Art Methods Practicum
1 credit
Implementation of secondary art methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 436 .

EDCI 447 Secondary Foreign Language Methods Practicum
1 credit
Implementation of secondary foreign language methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 437 .

EDCI 448 Introduction to ENL
3 credits
Joint-listed with EDCI 548
In this course, students will be introduced to the evolution, research, and current federal and state legal mandates of ENL education, the processes of language acquisition and development, and the role that culture plays in students' educational experiences. The students will begin to apply Language Acquisition Theory to their lesson planning, aligning their instruction to ELD and CCSSI.

EDCI 449 ENL Methods
3 credits
Joint-listed with EDCI 549
In this course, students will learn how to incorporate students' diverse cultural backgrounds and language proficiency levels into instructional planning that aligns with the English Language Development Standards. Students will learn how to measure the level of English Language Proficiency, become familiar with the state English Language Proficiency assessment, and learn how to interpret data and explain the results of standardized assessments to students with limited English proficiency, the students' families, and to colleagues.
Prereq for EDCI 449: EDCI 448
Prereq for EDCI 549: EDCI 548 .

EDCI 453 Phonics, Phonological Awareness, Fluency, and Assessment
1 credit
Specific methods, research, and strategies providing competency in phonological awareness, phonics, fluency, and assessments and intervention strategies.
Prereq or Coreq: EDCI 302 or MUST 383; or Permission .

EDCI 454 Secondary Mathematics Methods Practicum
1 credit
Implementation of secondary mathematics methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)
Prereq: EDCI 302 or Permission
Coreq: EDCI 434 .

EDCI 463 Literacy Methods for Content Learning
3 credits
Joint-listed with EDCI 563
Theory of and practical strategies for extending and reinforcing student learning of subject matter through reading and writing. Additional projects/assignments reqd for grad cr.
Prereq or Coreq: EDCI 302 or MUST 383.

EDCI 466 Literacy Assessment and Intervention
3 credits
Various assessment issues and procedures appropriate for monitoring student progress in reading and writing in the classroom; instructional methods for assisting readers at-risk. Recommended Preparation: EDCI 320 or EDCI 463.

EDCI 483 Elementary Internship I
7-14 credits
Guided observation, supervised instruction and comprehensive team and independent teaching in school settings with a discipline-specific and integrated pedagogical focus. Graded P/F.

EDCI 484 (s) Elementary Internship II
15 credits
Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings.
Prereq: Permission of division and EDCI 483.

EDCI 485 (s) Secondary Internship
15 credits
Gen Ed: Senior Experience
Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings. Graded P/F. Recommended Preparation: integrated course work.
Coreq: EDCI 401 and Permission of Department .

EDCI 490 Computer Science Methods
3 credits
Joint-listed with EDCI 590
This course is designed to provide pedagogical and content knowledge and experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 491 Computer Science Methods Practicum
1 credit
Joint-listed with EDCI 591
This course is designed to provide pedagogical and content knowledge and practical experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 498 (s) Internship
Credit arranged.

EDCI 499 (s) Directed Study
Credit arranged.

EDCI 500 Master's Res & Thesis
Credit arranged.

EDCI 501 (s) Seminar
Credit arranged.

EDCI 502 (s) Directed Study
Credit arranged.

EDCI 503 (s) Workshop
Credit arranged.

EDCI 504 (s) Special Topics
Credit arranged.

EDCI 505 (s) Professional Development
Credit arranged
Joint-listed with EDCI 405
Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

EDCI 509 Math Education Seminar
1 credit, max 6)
This weekly seminar will examine current research and theory in mathematics education. Participants will read, analyze, and discuss current research and theory articles. Participants will take an active role in discussions, including leadership of seminar discussions. Pass/Fail grading only.

EDCI 510 Ed Persp:Theory/Policies/Pract
3 credits
Overview of educational issues historically grounded and currently relevant to policies and practices in school settings; examination of how beliefs and practices are constructed and challenged from various philosophical frameworks applied to knowledge bases, administrative models, and developmental theories of learning.

EDCI 511 Planning and Administering the Curriculum
3 credits
Management skills, concepts, and information needed to administer a district-wide curriculum; audits and other evaluations as part of the curriculum or program development cycle; duties and responsibilities of curriculum developers from a standpoint of several possible roles and assignments; criteria and basic concepts for an audit, including essential curriculum management components, alignment, quality control, standards, and data sources.

EDCI 513 History of Educational Thought
3 credits
Writings that have influenced educational theory and practice.

EDCI 515 Social and Emotional Needs of Gifted/Talented Students
3 credits
This course is designed to examine the social-emotional characteristics of G/T students and to explore the relationship between the intellect and emotions of this special population.

EDCI 516 (s) College Teaching
1-2 credits, max 2
Techniques for effective teaching at college level.

EDCI 519 Foundations of Gifted/Talented Education
3 credits
This course is designed to develop knowledge of the philosophy, rationale, and historical perspectives of Gifted and Talented education.

EDCI 520 Critical Issues in Education
3 credits
This course helps students understand contemporary policy trends and research that are helping to shape the American educational landscape and encourages them to reflect on the meaning of education and schooling in a diverse society and to examine the moral and ethical responsibilities of teaching in a democracy.

EDCI 521 Teachers as Leaders
3 credits
Specific methods, research, and strategies providing proficiency in relevant technology skills and practices to enhance classroom management and instruction.

EDCI 524 Models of Teaching
3 credits
Examination of information processing, social interaction, personal, and behavioral models of teaching; emphasis on practical implementation of these models in teaching situations.

EDCI 526 Advanced Educational Psychology
3 credits
Examination of selected psychological theories as applied to classroom management, values education, instructional and motivational strategies, learning and cognitive styles, gender differences, and related educational research.
Prereq: EDCI 301 or Permission .

EDCI 531 Mathematics Education
3 credits
Students will examine relevant research and practical knowledge shared by the mathematics education community. Includes the examination of history, theoretical perspectives, student learning, and pedagogy. (Summer Only)

EDCI 533 Educational Policy and Strategic Planning
3 credits
This course is designed to introduce students to educational policy, the intergovernmental system of education in the US and some of the major issues and challenges confronting US policymakers. This seminar will increase students' understanding of the complexities of educational policy and to assist them in becoming effective leaders and practitioners who inform, shape, and implement education policy. This course has a particular focus federal and state policy in education. We will begin by examining standards-based, market-driven and professionally led models of reform, looking at their underlying theories of change, implementation challenges and the critiques leveled against these approaches.

EDCI 534 Schools as Organizations
3 credits
The purpose of this course is to examine the evolution of the "public school" in American society and culture, and then to examine the global competitive forces that are reshaping and driving the evolution of schools in America. We try to understand the role of the school; how schools and educational systems have changed over time; how comparative systems of education have defined their schools/school systems; and finally, we investigate how we can better organize educational systems, schools, and classrooms to address issues of justice, equity, and humanity.

EDCI 535 NBPTS Certification I
1-3 credits, max arranged
An overview of the National Board for Professional Teaching Standards (NBPTS) certification process and a framework for completion of requirements for National Board certification; gaining an understanding of the purpose of NBPTS certification by reviewing the history of the NBPTS certification process; students examine NBPTS standards and portfolio guidelines for their area of certification and receive guidance and consultation in gathering, organizing, and writing documentation required for the NBPTS portfolio.

EDCI 536 NBPTS Certification II
1-3 credits, max arranged
Continuation of EDCI 535. Students will complete the requirements for National Board certification, submit a complete portfolio, and prepare to take the assessment center exercises.
Prereq: EDCI 535 .

EDCI 543 Learning, Development and Assessment
3 credits
Joint-listed with EDCI 301
Exploration of theories of learning and human development and the use of this knowledge to support student success in classroom settings. Provides a practical understanding of motivation as a classroom management tool. Develops a fundamental understanding of assessment terminology; the uses of assessment and its relationship to student success.

EDCI 544 Teaching Culturally Diverse Learners
3 credits
Joint-listed with EDCI 302
An examination of cultural and linguistic diversity in classrooms. Explores strategies for creating the culturally inclusive classroom that values diversity and supports student success. Examines the use of instructional planning as a tool for motivation and classroom management. Includes practicum in K-12 classrooms.
Prereq: FCS 234 or EDCI 301 or EDCI 543, admission to teacher education program .

EDCI 545 Technology, Teaching and Learning
2 credits
Joint-listed with EDCI 410
Specific methods, research, and strategies providing proficiency in relevant technology skills and practices to enhance classroom management and instruction.
Prereq: EDCI 302 or EDCI 544 or permission .

EDCI 548 Introduction to ENL
3 credits
Joint-listed with EDCI 448
In this course, students will be introduced to the evolution, research, and current federal and state legal mandates of ENL education, the processes of language acquisition and development, and the role that culture plays in students' educational experiences. The students will begin to apply Language Acquisition Theory to their lesson planning, aligning their instruction to ELD and CCSSI.

EDCI 549 ENL Methods
3 credits
Joint-listed with EDCI 449
In this course, students will learn how to incorporate students' diverse cultural backgrounds and language proficiency levels into instructional planning that aligns with the English Language Development Standards. Students will learn how to measure the level of English Language Proficiency, become familiar with the state English Language Proficiency assessment, and learn how to interpret data and explain the results of standardized assessments to students with limited English proficiency, the students' families, and to colleagues.
Prereq for EDCI 449: EDCI 448
Prereq for EDCI 549: EDCI 548.

EDCI 550 Contexts of Education
3 credits
Joint-listed with EDCI 201
Introduction to the philosophical, social, cultural, historical, legal and political contexts of schooling. Develops an understanding of the sources of curriculum, standards, and assessments. Explores what it means to become a successful teacher committed to student success through the development of observation and analysis skills. Requires additional 20 hours of service learning.

EDCI 563 Literacy Methods for Content Learning
3 credits
Joint-listed with EDCI 463
Theory of and practical strategies for extending and reinforcing student learning of subject matter through reading and writing. Additional projects/assignments reqd for grad cr.
Prereq or Coreq: EDCI 302 or MUST 383.

EDCI 565 Linguistics, Literacy, and Brain Function
3 credits
Course examines the psycholinguistic processes of literacy acquisition and learning in conjunction with recent physiological brain research.
Prereq: EDCI 320 and EDCI 466; or Permission.

EDCI 570 Introduction to Research in Curriculum and Instruction
3 credits
Explorations of research foundations focused on developing skills in consuming, synthesizing and conduction research from contemporary and diverse perspectives.

EDCI 572 Measurement and Evaluation
3 credits
Improvement of testing, examination, and evaluation in schools; practice in making, giving, scoring, and interpreting tests; use of results in counseling.

EDCI 581 Theoretical Foundations of Online Learning
3 credits
This course provides an overview of theoretical issues surrounding online learning, including considerations of new technologies, socio-cultural diversity, learning theories, pedagogical approaches, and emerging trends.
Prereq: Senior-status in teacher preparation program with sufficient GPA or Graduate-status in an education-related field .

EDCI 582 Online Course Design
3 credits
This course teaches students the course design process and provides them with opportunities to design, develop, and evaluate online course modules.
Prereq: EDCI 581; and Senior-status in teacher preparation program with sufficient GPA or Graduate-status in an education-related field .

EDCI 583 Open Education
3 credits
This course addresses ethical, legal, and behavioral issues related to online learning, including social participation, copyright, internet safety, and etiquette and provides students with opportunities to apply their knowledge to practice.
Prereq: EDCI 581; and Senior-status in teacher preparation program with sufficient GPA or Graduate-status in an education-related field .

EDCI 590 Computer Science Methods
3 credits
Joint-listed with EDCI 490
This course is designed to provide pedagogical and content knowledge and experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 591 Computer Science Methods Practicum
1 credit
Joint-listed with EDCI 491
This course is designed to provide pedagogical and content knowledge and practical experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 595 Practicum in Online Learning
3 credits
This practicum is taught in conjunction with Idaho Distance Learning Academy (IDLA) and provides students with opportunities to teach and assess K12 students in an authentic online setting.
Prereq: EDCI 582 and EDCI 583; and Senior-status in teacher preparation program with sufficient GPA or Graduate-status in an education-related field .

EDCI 597 (s) Practicum
Credit arranged
Graded P/F.
Prereq: Permission.

EDCI 598 (s) Internship
Credit arranged
Currently offered in public school teaching and college teaching. Graded P/F.
Prereq: Permission.

EDCI 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

EDCI 600 Doctoral Res & Disser
Credit arranged.

EDCI 601 (s) Seminar
Credit arranged.

EDCI 602 (s) Directed Study
Credit arranged.

EDCI 604 (s) Special Topics
Credit arranged.

ED-SPECIAL EDUCATION (EDSP)

EDSP 200 (s) Seminar
Credit arranged.

EDSP 204 (s) Special Topics
Credit arranged.

EDSP 299 (s) Directed Study
Credit arranged.

EDSP 300 Educating for Exceptionalities
3 credits
Introduction to exceptionalities and strategies for addressing individual differences to ensure student success in the classroom.

EDSP 325 Supporting Student Behaviors in the Classroom
2 credits
Emphasis on behavioral principles and their relationship to instructional strategies. Recommended Preparation: EDCI 201. (Summer only)

EDSP 350 Language and Communication Development and Disorders
3 credits
Overview of language, communication, and socio/emotional development and their interaction with cognitive and learning disabilities; legal and cultural issues; informal assessments and teaching strategies; models for collaboration with speech and language professionals. (Summer only)
Prereq: EDCI 201 or FCS 210 .

EDSP 390 (s) Special Education Field Experience
1-3 credits, max 3
Supervised observation and/or instruction with students with disabilities; group discussion sessions. Graded P/F.

EDSP 400 (s) Seminar
Credit arranged.

EDSP 403 (s) Workshop
Credit arranged.

EDSP 404 (s) Special Topics
Credit arranged.

EDSP 405 (s) Professional Development
Credit arranged
Joint-listed with EDSP 505
Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

EDSP 411 Beginning Sign Language I
1 credit
This course will enable students to begin to use and understand the language used by D/deaf people in the United States, including common phrases, idioms, expressions, sentences and questions used in daily conversation. (Fall only)

EDSP 412 Beginning Sign Language II
1 credit
This course will expand the vocabulary and understanding of the language used by D/deaf people in the United States. Students' will become more comfortable in using body language and facial expression to communicate in sign language, begin to become more fluent in the basic vocabulary of signs, and begin to dialogue with others. (Spring only)
Prereq: EDSP 411 or Experience with ASL .

EDSP 423 Collaboration
3 credits
Strategies for developing and facilitating collaboration with schools, families and community partners including methods to increase successful collaboration and inclusion, interpersonal and intrapersonal dynamics that facilitate the collaboration process, problem solving teams, and effective models of collaboration. (Spring only)
Prereq: EDSP 300, EDSP 325, and EDSP 350 .

EDSP 425 Evaluation of Children and Youth
3 credits
Assessment procedures for determining eligibility and identifying educational needs of students with disabilities, legal issues including Response to Intervention and Alternative Assessment, and current trends. (Spring only)
Prereq: EDSP 300, EDSP 325, and EDSP 350 .

EDSP 426 Developing Instructional Programs
3 credits
Overview of assumptions, current trends, legal and cultural issues; application of learning principles and strategies for curriculum development; collaborative development of Individual Education, Instruction, and Transition Plans; methods for evaluating student progress and instructional effectiveness. (Spring only)
Prereq: EDSP 300, EDSP 325, and EDSP 350 .

EDSP 430 Assistive Technology and Universal Design for Learning for PreK-12
2 credits
Joint-listed with EDSP 530
This course is designed to introduce students to assistive technology (AT), instructional technology, and universal design for learning (UDL). Together, they provide a foundational environment in which all students, including those with disabilities, can survive and thrive in the general education setting. This course will increase participants' understanding of the relationship between instructional design and technology and prepare for successful implementation. The course will move from individualized consideration of assistive technology to a naturally supported least restrictive environment.
Prereq for 430: EDSP 300, EDSP 325, and EDSP 350 .

EDSP 448 Special Education Curriculum
3 credits
Joint-listed with EDSP 548
This course is designed to enable professional educators to assume leadership roles in the development and implementation of instructional programs and services for students with disabilities. Attention will be given to theoretical models, curriculum approaches, practices in developing curricula, the use of technology and assistive technology in instruction, techniques for delivering instruction in a variety of educational settings, and trends and issues in special education instruction.
Prereq for 448: EDSP 300, EDSP 325, and EDSP 350 .

EDSP 484 (s) Special Education Internship II
1-15 credits
Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings.
Prereq: Permission of division
Coreq: Integrated course work and EDCI 401.

EDSP 498 (s) Internship
Credit arranged.

EDSP 499 (s) Directed Study
Credit arranged.

EDSP 500 Master's Research and Thesis
Credit arranged.

EDSP 501 (s) Seminar
Credit arranged.

EDSP 502 (s) Directed Study
Credit arranged.

EDSP 503 (s) Workshop
Credit arranged.

EDSP 504 (s) Special Topics
Credit arranged.

EDSP 505 (s) Professional Development
Credit arranged
Joint-listed with EDSP 405
Professional development and enrichment of certificated school personnel. Cr earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

EDSP 519 Orientation to Autism Spectrum Disorder
3 credits
As the number of students with Autism Spectrum Disorders (ASD) continues to rise, all teachers need to be prepared to work with students with ASD diagnosis. This class will assist teachers in identifying students with ASD and implementing evidence based practices to foster their academic and social successes. The course will address characteristics, placement alternatives, instructional methods, curricular models, and issues applicable to the education of students with ASD. Students will also become familiarized with challenges faced by the families of people with ASD and life-span challenges. The course will also explain what ASD is and how it is defined in the Diagnostic and Statistical Manual V for the medical community. This course expands on the College of Education, Health and Human Sciences' other special education courses focusing specifically on ASD.

EDSP 520 Education of People with Disabilities
3 credits
Introduction to the education of people with disabilities, primarily in the school setting. History and foundation of special education, areas of exceptionality, instructional practices, issues and trends and law and legislation as it applies to persons with disabilities. (Fall and Summer only)

EDSP 522 Advanced Evaluation Techniques
2 credits
Implementation of evaluation tools, practices, and processes that extend beyond eligibility decisions to alternative assessments for early childhood, elementary, and secondary students with disabilities; integration of assessment and curriculum; legal, cultural, and ethical issues. (Summer only)
Prereq: EDSP 425.

EDSP 530 Assistive Technology and Universal Design for Learning for Pre-K12
2 credits
Joint-listed with EDSP 430
This course is designed to introduce students to assistive technology (AT), instructional technology, and universal design for learning (UDL). Together, they provide a foundational environment in which all students, including those with disabilities, can survive and thrive in the general education setting. This course will increase participants' understanding of the relationship between instructional design and technology and prepare for successful implementation. The course will move from individualized consideration of assistive technology to a naturally supported least restrictive environment.
Prereq for 430: EDSP 300, EDSP 325, and EDSP 350 .

EDSP 531 Single Subject Design Research
3 credtis
Prepares graduate students with knowledge and experience using single subject designs. Single subject designs are quantitative approaches that use specific design features to demonstrate experimental control and internal validity of observable and quantifiable behavior most often displayed and interpreted through line graphs and charts. External validity is demonstrated through replication.
Prereq: EDSP 540 or equivalent .

EDSP 540 Behavioral Analysis for Children and Youth
3 credits
Application of learning theory to instruction; principles of behavior analysis with application to teaching; applied research techniques, ethical, legal, and cultural issues. Completion of field work in applied setting required. (Fall only)

EDSP 548 Special Education Curriculum
3 credits
Joint-listed with EDSP 448
This course is designed to enable professional educators to assume leadership roles in the development and implementation of instructional programs and services for students with disabilities. Attention will be given to theoretical models, curriculum approaches, practices in developing curricula, the use of technology and assistive technology in instruction, techniques for delivering instruction in a variety of educational settings, and trends and issues in special education instruction.
Prereq for 448: EDSP 300, EDSP 325, and EDSP 350 .

EDSP 549 Language, Communication, and Social/Emotional Enhancement
3 credits
Overview of theory and research findings; discussion of current issues, rationale, and intervention programs and strategies with an emphasis on social relations and interactions, legal mandates, and cultural issues. Includes a field component and project. (Spring only)

EDSP 552 Principles of Leadership in Neurodevelopmental Disorders
3 credits
Students are trained to move beyond discipline boundaries to provide optimal services to child and adolescents with special health care needs. Enhance skills in evidence based practice via evaluating the validity of published research, understanding the role of outcomes-based information in decision making, and conduct meaningful, scientifically grounded research to improve systems of care to children with special healthcare needs.

EDSP 553 Principles of Leadership in Neurodevelopmental Disorders 2
3 credits
Students are trained to move beyond discipline boundaries to provide optimal services to child and adolescents with special health care needs. Enhance skills in evidence based practice via evaluating the validity of published research, understanding the role of outcomes-based information in decision making, and conduct meaningful, scientifically grounded research to improve systems of care to children with special healthcare needs.

EDSP 554 Principles of Leadership in Neurodevelopmental Disorders Autism Enhanced 1
2 credits
This course is part of the proposed doctoral course work in Special Education. This course is offered with the assistance/support of the Utah Regional Leadership in Neurodevelopmental Disabilities program (URLEND) and the University of Utah Medical School who offer some of the trainings / clinics that students enrolled in this course participate in. This course is taught in-load by faculty at the Center on Disabilities and Human Development and does not burden the college or department.

EDSP 555 Principles of Leadership in Neurodevelopmental Disorders Autism Enhanced 2
2 credits
Students are trained to move beyond discipline boundaries to provide optimal services to children and adolescents with special autism spectrum disorders. Students will increase their knowledge of issues related to the definition, epidemiology, and prognosis of ASD, enhance their knowledge of screening and diagnostic measures for ASD, enhance their knowledge of interventions for ASD, engage in research related to ASD, enhance their leadership skills in the area of ASD.

EDSP 597 (s) Practicum
Credit arranged
Graded P/F.
Prereq: Permission.

EDSP 598 (s) Internship
Credit arranged
Supervised field experience in an appropriate public or private agency. Graded P/F.
Prereq: Permission.

EDSP 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

EDSP 600 Doctoral Research and Dissertation
Credit arranged.

EDUCATION (ED)

ED 204 (s) Special Topics
Credit arranged.

ED 250 CoEd Student Ambassador
1 credit, max 2
The College of Education Ambassadors are a select group of students representing all departments within our college and assist the college in recruitment and retention of highly qualified students, and promotional activities.

ED 299 (s) Directed Study
Credit arranged.

ED 403 (s) Workshop
Credit arranged.

ED 404 (s) Special Topics
Credit arranged.

ED 405 (s) Professional Development
Credit arranged.

ED 498 (s) Internship
Credit arranged.

ED 499 (s) Directed Study
Credit arranged.

ED 501 (s) Seminar
Credit arranged.

ED 502 (s) Directed Study
Credit arranged.

ED 503 (s) Workshop
Credit arranged.

ED 504 (s) Special Topics
Credit arranged.

ED 505 (s) Professional Development
Credit arranged.

ED 571 Introduction to Quantitative Research
3 credits
Overview of research techniques, emphasizing experimental, quasi-experimental, descriptive, analytical, single subject designs. Special emphasis on interpreting and critically evaluating research articles; planning, analyzing, and writing quantitative research studies.
Prereq: Graduate standing.

ED 573 Action Research
3 credits
Introduction to action research as a form of systematic applied inquiry conducted by professionals to gain insight, develop reflective perspective, effect change, enhance environment, and improve practice, pedagogy, learner/participant outcomes, policies/procedures. Goals of course include: understanding the theoretical foundations of practical and critical action research, self-study, and teacher research; examining the impact of action research on professional knowledge/actions/environment; exploring processes for identifying area of focus, generating data, analyzing and interpreting data, and developing an action plan for change.

ED 574 Survey of Qualitative Research
3 credits
This course reviews the foundations of qualitative design, investigating the history, philosophy, key concepts and terms, and nature of qualitative research. Examples of different types of qualitative research and assessment issues will be discussed, specifically focusing on the main qualitative traditions (case study, phenomenology, ethnography, narrative, historical, and action research). Topics will include: conceptualizing research questions, reviewing the literature, selection of appropriate design and methods of data collection, positionality, logic and coherency of research procedures/methods; interpretation of findings, establishing quality and rigor; research writing and reading, Institutional Review Board policies with respect to human subjects; and ethical issues. Students will read and evaluate qualitative research, conduct components of qualitative research, and identify methodological elements and issues.
Prereq: Permission .

ED 584 Univariate Quantitative Research in Education
3 credits
The overall goal of the course is to prepare students to apply quantitative research methodology in education. Topics include understanding applied experimental, quasi-experimental and behavioral designs, survey design, measurement and instrumentation, sampling, item analysis, reliability analysis, and validity assessment.
Prereq: ED 571.

ED 587 Multivariate Quantitative Analysis in Education
3 credits
Analysis and application of multivariate quantitative research methods in education and social sciences. The goal of the course is to expose students to multivariate statistics and quantitative research approaches. Topics include multiple correlation/regression, discriminate analysis, exploratory and confirmatory factor analysis, multivariate analysis of variance (MANOVA), multivariate analysis of covariance (MANCOVA), canonical correlation analysis, cluster analysis, log linear model, path analysis and structural equation modeling.
Prereq: ED 584 or Permission.

ED 589 Theoretical Applications and Designs of Qualitative Research
3 credits
This course builds and expands on ED 574 Survey of Qualitative Research and examines qualitative research designs and the use of theory in qualitative research. The course will introduce ethnography, phenomenology, case study, narrative, historical and action research designs. Each design will be explored through four overarching theoretical lenses (organizational, economic, critical, and learning), allowing students to understand the role of theory in guiding and informing research design and methods. The aim of the course is to give students the tools to conceptualize their thesis or dissertation work.
Prereq: ED 574 or Permission .

ED 590 Data Analysis and Interpretation of Qualitative Research
3 credits
This course builds and expands on ED 589 Theoretical Applications and Design of Qualitative Research and is designed for graduate students who intend to conduct qualitative research. This course is an advanced seminar to assist in developing skills in data analysis and the presentation of qualitative research findings. It will focus on contemporary discourse among qualitative researchers concerning the analysis of qualitative data. Theoretical foundations learned in ED 574 and ED 589 will be revisited as participants examine the ways in which theory informs and guides analysis and interpretation. Assignments are designed to facilitate the interaction between data, analysis, writing, and the literature.
Prereq: ED 574 and ED 589 .

ED 591 Indigenous and Decolonizing Research Methods
3 credits
In this course, students will explore the historic and current discourse in Indigenous and Decolonizing Research. From an interdisciplinary perspective, students will analyze knowledge production through histories of Indigenous persistence and resistance to colonial power. Course content will expose students to methodologies grounded in the lived experiences and histories of individuals and communities marginalized by the colonial legacy, and will seek to engage students in research which invigorates connections, struggles, and knowledges to reflect reciprocal benefit to communities beyond the academy.

ED 595 Survey Design for Social Science Research
3 credits
This course focuses on the design and development of the survey instrument. Topics include how to word questions, validation, development of appropriate scales, traditional and alternative modes of survey administration; impacts of non-response; the effect of question structure, wording and context of instrument items; and post-survey follow-up and data processing. Recommended Preparation: Foundations of research course at graduate level.

ED 598 (s) Internship
Credit arranged.

ED 599 (s) Non-thesis Master's Research
Credit arranged.

ED 600 Doctoral Research & Dissertation
Credit arranged.

ED 602 (s) Directed Study
Credit arranged.

ED 604 (s) Special Topics
Credit arranged.

ED 611 Doctoral Seminar I
1 credit
This seminar is intended to help facilitate a community among doctoral students and build an understanding of the processes and strategies necessary for success in the doctoral program. (Fall only)
Prereq: Enrollment to a doctoral program .

ED 612 Doctoral Seminar II
1 credit
The seminar is intended for those doctoral students who have completed all or most of their course work. The seminar will focus on preparation for the preliminary examination and advancement to candidacy. Preparation of the dissertation proposal will also be covered. (Spring only)
Prereq: Enrollment to a doctoral program .

ED 620 Grant Writing
3 credits
The reality in today's context is that organizations are resource challenged. Increasingly organizations are dependent on garnering external resources to be able to successful accomplish their missions. In this course students are guided from developing ideas and identifying potential funding sources to the submission of proposals as well as follow up techniques.

ED 628 Program Evaluation
3 credits
Schools, organizations, and community agencies are being increasingly held accountable for their respective programs. This course addresses how action research can be a powerful tool for empirically evaluating all aspects of a given program.
Prereq: ED 573 .

ED 668 Writing for Publication
3 credits
Development of knowledge, skills, and potential of researchers and other writers desiring to prepare and publish manuscripts in education or other professional and trade journals; technical and theoretical aspects of writing for publication and the process of manuscript preparation, submission, and editing.
Prereq: Enrollment in a doctoral program in Education.

ED 680 Philosophical Foundations of Educational Research
3 credits
This doctoral level course involves learners in an examination of the philosophical foundations, epistemological assumptions, and methodological frameworks of educational and social science research. Given the current acknowledgement of the importance of perspective and point of view in inquiry. readings in gender, class, and ethnic identity will be included.
Prereq: Enrollment to a doctoral program .

EDUCATIONAL ADMINISTRATION (EDAD)

EDAD 403 (s) Workshop
Credit arranged.

EDAD 404 (s) Special Topics
Credit arranged.

EDAD 405 (s) Professional Development
Credit arranged.

EDAD 499 (s) Directed Study
Credit arranged.

EDAD 500 Master's Research and Thesis
Credit arranged.

EDAD 501 (s) Seminar
Credit arranged.

EDAD 502 (s) Directed Study
Credit arranged.

EDAD 503 (s) Workshop
Credit arranged.

EDAD 504 (s) Special Topics
Credit arranged.

EDAD 505 (s) Professional Development
Credit arranged
Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program.

EDAD 509 Educational Policy and Politics for Educational Leaders
2-3 credits
Principles and problems of organization and administration of American education, including local, regional, and state systems.

EDAD 513 Administration of Special Education Law
3 credits
Explore in-depth the legal issues related to the delivery of special education and pupil services. The course examines legal frameworks used to address issues in this area.

EDAD 524 History and Philosophy of Higher Education in the U.S.
3 credits
Exploration of history and philosophy of higher education from its origins to the present day; emphasis on trends and issues that have impacted higher education and contributed to its evolution.

EDAD 528 Leading Standards Driven Instruction
3 credits
This course explores the management skills, concepts, and information needed to administer a district-wide standards-based instructional and assessment program, with emphasis at the school principal level. This also includes the role of the administrator in supervising for change through the creation of an inclusive learning environment. The administrator¿s responsibility in the auditing of content standards and corrective procedures based on assessment results will be covered in depth. The course will also include the various forms of standards-based assessment, both formative and summative, and how to lead organizations to align instruction with state assessments. Both the content and context of instruction and its effect on assessment results will be covered. The formal as well as the informal content of the instructional process and the leader¿s responsibility to supervise for both is a critical component of creating inclusive learning environments. The effect of technology, articulation, and the role of the administrator in monitoring what is taught will be investigated as a means toward quality control. (Fall only)
Prereq: Bachelor's Degree in Education.

EDAD 530 Ethical Leadership and Law in Education
3 credits
Ethical and legal principles undergirding schools in the U.S.; statutory and case laws focusing on Idaho and surrounding states.

EDAD 533 Multicultural Diversity and Educational Leadership
3 credits
An introductory graduate-level course in educational administration with an emphasis on the diverse student population that we serve. Its aim is to examine what it means to lead educational organizations in a changing society. Specifically the course focuses on policy, theory and practice, as they relate to diverse school populations. Issues related to multicultural diversity will be drawn from readings as well as personal experiences. The goal of the class is to assist students in developing their own understanding and skills in becoming more effective leaders in organizations that affirm diversity.

EDAD 534 The Principalship
3 credits
Prepare students for assuming the role of elementary or secondary school principal; emphasis on skills reqd for confidence in the role of principal.

EDAD 535 School Finance
3 credits
Theory and application of financing schools; application to Idaho schools. Cooperative: open to WSU degree-seeking students.
Prereq: EDAD 509.

EDAD 570 Methods of Educational Research
3 credits
This course examines philosophical and theoretical frameworks, methodologies, strategies, techniques, and designs of educational research. The primary themes: (1) the integration of research with educational practices, (2) the role of diversity in the social/political context of research, and (3) the design and use of research in education.

EDAD 571 Educational Leadership in the Global Society
3 credits
This course is designed to empower superintendents to become leaders who are culturally knowledgeable and can function well and initiate change in multicultural and international settings. This need is driven by rapid changes in the educational marketplace, competition in technical and financial resources, and the emergence of a global economy. Students gain an understanding of culture and pluralism as it relates to present organizations and trans-organizations with a global framework. The course emphasizes organizations that are global within as well as outside the United States, multinational organizations, transnational organizations, as well as global, social-change issues. Issues covered include adapting organization development strategies to the cultural blinders, understanding cultural diversity and the effect of cultural values on the organization change process, and applying strategy to dramatically changing environments.
Prereq: Bachelor's Degree in Education.

EDAD 580 Special Education Director Administration
3 credits
This course is designed to prepare students for assuming the role of Special Education Director. Content includes supervision of personnel, legal and financial issues in special education, promoting school climate, collaborative leadership, and instructional leadership.

EDAD 584 Bargaining/Mediation/Arbitration
3 credits
For superintendent candidates. This course examines a bargaining model endorsed by state organizations and prepares the superintendent for collective bargaining and other dispute resolution models.

EDAD 586 Advanced School Finance
3 credits
Economic principles to provide insights into practical matters relating to school finance for principals, teachers, business managers, and other school officials; issues of educational productivity, allocation of resources, efficiency, equity, and liberty; review of basic accounting principles and requirements applying to both district and building levels.
Prereq: EDAD 535.

EDAD 587 The Superintendency
3 credits
Prepare students for assuming the role of superintendent of schools; emphasis on research-based role expectation and practical guidelines for superintendent behavior.

EDAD 592 School-Community Relations
3 credits
Interpreting the schools to the public, two-way flow of ideas between school and community.

EDAD 593 School Facilities Planning and Maintenance
3 credits
Planning new school facilities; facility maintenance; legal provisions involving financing; preliminary surveys of need; relationships with architects and contractors.

EDAD 594 Theory in Educational Administration
3 credits
Theories from psychology, sociology, and cultural points of view applied to school administration; problem solving/decision making; case study approach.
Prereq: EDAD 509.

EDAD 595 Administration and Supervision of Personnel
3 credits
School-level personnel issues - certified and classified - including supervision and evaluation models, resource allocation, professional development, recruitment, contract law, tort law, selection, placement, evaluation and collective bargaining. Case studies in each area are presented, using local district materials, internet searches and text readings. While the principal's role is the main focus, the course also examines district level issues such as personnel organization and school board policies.

EDAD 597 (s) Practicum
Credit arranged.

EDAD 598 (s) Internship
Credit arranged
Interns assigned for two semesters to practicing administrators in elementary or secondary schools or in district offices or in appropriate offices in higher education. Graded P/F.
Prereq: Approval of major professor and substantial completion of certification program.

EDAD 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission of major professor.

EDAD 600 Doctoral Res & Disser
Credit arranged .

EDAD 604 (s) Special Topics
Credit arranged .

EDAD 698 (s) Internship
Credit arranged .

ELECTRICAL & COMPUTER ENGR (ECE)

ECE 101 Foundations of Electrical and Computer Engineering
2 credits
Introductory course for incoming students with little or no fundamental electrical/computer engineering knowledge. Includes coverage of basic analog and digital circuits. Lab assignments also included.
Coreq: MATH 143 or MATH 170.

ECE 204 (s) Special Topics
Credit arranged.

ECE 210 Electrical Circuits I
3 credits
Intro to d.c. and transient electrical circuits; mesh and nodal analysis; dependent sources; circuit theorems; transient analysis with differential equations. Three lec and one recitation a wk.
Prereq: MATH 175 with a grade of 'C' or better
Coreq: ECE 211, MATH 310 and PHYS 212 and PHYS 212L.

ECE 211 Electrical Circuits Lab I
1 credit
Lab to accompany ECE 210. Lab experiments and computer simulations. One 3-hr lab a wk.
Coreq: ECE 210 and PHYS 212 and PHYS 212L.

ECE 212 Electrical Circuits II
3 credits
Continuation of ECE 210. Intro to sinusoidal steady state circuits; time and frequency domain analysis; Laplace transforms; Fourier series; transfer functions; Bode plots, filters. Three lec and one recitation a wk.
Prereq: ECE 210, MATH 310, and PHYS 212 and PHYS 212L; a grade of 'C' or better is required for all prerequisite courses
Coreq: ECE 213.

ECE 213 Electrical Circuits II Lab
1 credit
Lab to accompany ECE 212. Continuation of ECE 211. Lab experiments and computer simulations. One 3-hr lab a wk.
Prereq: ECE 211 and PHYS 212 and PHYS 212L
Coreq: ECE 212.

ECE 240 Digital Logic
3 credits
Number systems, truth tables, logic gates, flip-flops, combinational and synchronous sequential circuits; intro to digital systems and basic microprocessor architecture.
Prereq: PHYS 212 and PHYS 212L
Coreq: ECE 241.

ECE 241 Logic Circuit Lab
1 credit
Lab to accompany ECE 240.
Prereq: PHYS 212 and PHYS 212L
Coreq: ECE 240.

ECE 292 Sophomore Seminar
0 credits
Curriculum options, elective courses, preparation for graduate study, professional ethics, and current technical topics. Field trip may be reqd. Graded P/F.

ECE 299 (s) Directed Study
Credit arranged.

ECE 310 Microelectronics I
3 credits
Operational amplifier fundamentals and applications, introduction to electronic devices such as diodes, bipolar junction transistor (BJT) and metal oxide semiconductor field effect transistors (MOSFET), large and small-signal modeling of non-linear electronic devices, DC and small-signal analysis of circuits with non-linear electronic devices, biasing of electronic circuits using passive and active elements such as current mirrors, frequency response of electronic circuits, introduction to the analysis, design, and applications of electronic circuits such as rectifiers, power supplies, and low-frequency single-stage amplifiers. Practical limitations of amplifiers of electronic circuits.
Prereq: ECE 212 and ECE 213
Coreq: ECE 311.

ECE 311 Microelectronics I Lab
1 credit
Lab to accompany ECE 310.
Coreq: ECE 310.

ECE 319 Background Study in Electronics
3 credits
Not applicable toward any UI undergrad degree; valid only for removal of electronics (ECE 310) deficiency for grad students who do not have BSEE background. See ECE 310 for description. Graded P/F based on comprehensive exam at completion of course.
Prereq: Permission .

ECE 320 Energy Systems I
3 credits
Single-phase AC measurements, transformer parameters, transformer performance, rotating DC machines, DC-DC PE converters. Three lec a wk.
Prereq: ECE 212 and PHYS 212 and PHYS 212L
Coreq: ECE 321.

ECE 321 Energy Systems I Laboratory
1 credit
Lab to accompany ECE 320. Lab experiments and computer simulations. One 3-hr lab a wk.
Prereq: ECE 213, PHYS 212, PHYS 212L, MATH 310
Coreq: ECE 320.

ECE 329 Background Study in Electrical Machines
3 credits
Not applicable toward any UI undergrad degree; valid only for removal of electrical machinery (ECE 320) deficiency for grad students who do not have BSEE background. See ECE 320 for description. Graded P/F based on comprehensive exam at completion of course.
Prereq: Permission .

ECE 330 Electromagnetic Theory
3 credits
Vector mathematics; charge and current; fields as forces; work, potential and electro-motive force; Faraday's law of induction; Gauss's and Ampere's laws; material modeling; waves in isotropic media.
Prereq: MATH 275, MATH 310, and PHYS 212 and PHYS 212L
Coreq: ECE 331.

ECE 331 Electromagnetics Laboratory
1 credit
Lab to accompany ECE 330. Lab experiments and computer simulations. One 3-hr lab a wk.
Prereq: MATH 275, MATH 310; PHYS 212 and PHYS 212L
Coreq: ECE 330.

ECE 339 Background Study in Electromagnetic Theory
3 credits
Not applicable toward any UI undergrad degree; valid only for removal of electromagnetic theory (ECE 330) deficiency for grad students who do not have BSEE background. See ECE 330 for description. Graded P/F based on comprehensive exam at completion of course.
Prereq: Permission .

ECE 340 Microcontrollers
3 credits
Introduction to use of embedded microcontrollers and microprocessors; processor architecture; programming; use of development systems and/or emulators for system testing and debugging; software and hardware considerations of processor interfacing for I/O and memory expansion; programmed and interrupt driven I/O techniques.
Prereq: ECE 212, ECE 213, ECE 240, ECE 241, and CS 112 or CS 120
Coreq: ECE 341.

ECE 341 Microcontrollers Lab
1 credit
Lab to accompany ECE 340.
Coreq: ECE 340.

ECE 349 Background Study Digital Logic
3 credits
Not applicable toward any UI undergraduate degree; valid only for removal of digital computer fundamentals (ECE 240) deficiency for graduate students. See ECE 240 for description. Graded P/F.

ECE 350 Signals and Systems I
3 credits
Continuous and discrete, linear time invariant systems. Continuous and discrete linear time invariant systems. Differential and difference equations. Convolution integrals and sums. Fourier and Laplace transforms. Discrete time Fourier transforms and Z transforms. Emphasis on practical applications to engineering systems.
Prereq: ECE 212 and MATH 310
Coreq: ECE 351.

ECE 351 Signals and Systems I Lab
1 credit
Laboratory to accompany ECE 350. Software and hardware laboratories. Introduction to Matlab.
Coreq: ECE 350.

ECE 359 Background Study in Signals and Systems Analysis
3 credits
Not applicable toward any UI undergrad degree; valid only for removal of signals and systems analysis (ECE 350) deficiency for grad students who do not have BSEE background. See ECE 350 for description. Graded P/F based on comprehensive exam at completion of course.
Prereq: Permission .

ECE 398 Electrical Engineering Cooperative Internship
1-3 cr, max arranged
Supervised internship in industry in professional engineering settings, integrating academic study with work experience; requires weekly progress reports, a final written report, and a talk/presentation and additional details to be worked out with the faculty supervisor. Cannot be counted as a technical elective toward the B.S.E.E. or B.S.Comp.E. Graded P/F.
Prereq: Permission.

ECE 404 (s) Special Topics
Credit arranged.

ECE 410 Microelectronics II
3 credits
Introduction to analog integrated circuit (IC) implementation and design, differential and common-mode signal concepts, differential amplifiers, multistage amplifiers, operational amplifier design, frequency response of electronic circuits, feedback in electronic circuits, large-signal/power amplifiers, advanced current sources and mirrors, and fundamentals of analog filters.
Prereq: ECE 310 and ECE 311; or Permission.

ECE 413 Radio-Frequency IC Design
3 credits
Joint-listed with ECE 513.
Radio frequency (RF) communications concepts, integrated circuit (IC) transceiver architectures, low-noise amplifier, mixers, passive devices and matching networks, oscillators, power amplifiers, phase-locked loops, and frequency synthesizers. Additional projects/assignments are required for graduate students. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 410 or Permission.

ECE 415 Analog Integrated Circuit Design
3 credits
Joint-listed with ECE 515
Analog integrated circuit (IC) analysis, design, simulation, and layout, advanced biasing techniques, voltage references and regulators, operational amplifiers, frequency compensation techniques, noise analysis in analog circuits, and continuous-time integrated circuit filter design. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 410 or Permission.

ECE 417 Mixed Signal IC Design
3 credits
Joint-listed with ECE 517
Sample and hold (S/H) circuits, comparators, data-converter fundamentals, Nyquist-rate digital-to-analog converters (DAC) and analog-to-digital converters (ADC), over-sampling data converters, and phase-locked loops. Additional projects/assignments are required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 410 or Permission.

ECE 418 Introduction to Electronic Packaging
3 credits
Joint-listed with ECE 518
This course serves as an introduction to electronic packaging and "back-end" microelectronic processes. Topics include substrate design & fabrication, SMT & first level assembly, clean room protocol, thermal design, simulation, and process considerations. Additional project work will be required for students enrolled in 518. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 310 .

ECE 419 Image Sensors and Systems
3 credits
Joint-listed ECE 516
This course introduces various concepts and fundamentals related to semiconductor image sensors. Topics cover light production and detection, video image formats, image sensor characteristics and performance metrics, basic and advanced operation principals and types of semiconductor image sensors (CCD and CMOS), noise in imagers, image and color processing, and issues related to camera system design, integration and signal processing. Additional projects/assignments are required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: *ECE 310* .

ECE 420 Energy Systems II
3 credits
Three-phases, three-phase transformers, winding theory, rotating waves, steady state operation of three-phase synchronous and steady state operation of single and three-phase induction machines, and AC drives. Labs: three-phase measurements, three-phase transformers, synchronous machines, induction machines. ECE 420 cannot be counted as a graduate depth area course.
Prereq: ECE 320 and ECE 321 .

ECE 421 Introduction to Power Systems
3 credits
One line diagrams, regulating transformers, calculation of transmission line parameters, line models, Ybus, power flow, power flow studies using commercial software, contingency studies, and power system control. (Fall only)
Coreq: ECE 420 .

ECE 422 Power Systems Analysis
3 credits
Balanced and unbalanced faults, Zbus methods, transient generator models, stability analysis, fault analysis using commercial software, and introduction to power system protection. (Spring only)
Prereq: ECE 421 .

ECE 427 Power Electronics
3 credits
Characteristics, limitations, and application of solid state power devices; practical aspects of power electronic converters, including rectifiers and inverters; choppers, AC phase control, and device gating techniques. Cooperative: open to WSU degree-seeking students.
Coreq: *ECE 420* .

ECE 430 Microwave and Millimeter Wave Circuits
3 credits
Telegrapher's and wave equations; characteristic impedance, wave velocity and wave number; physical transmission lines, including coax, microstrip and stripline; circuit analysis techniques, reflection coefficient and power flow; impedance analysis, impedance matching techniques and Smith Chart; S-parameters; Wilkinson power dividers, circulators and hybrid couplers; transformers and filters.
Prereq: ECE 330 or Permission.

ECE 432 Propagation of Wireless Signals
3 credits
Maxwell's Equations, including Poynting's vector and Poynting's theorem; Wave equation with solutions, Helmholz equation, plane waves; Reflection and refraction; Theory of guided waves, ray theory and mode theory; Atmospheric and ionospheric effects on wave propagation; Multipath effects and fading; Ground waves and surface waves. Course will be offered every third semester.
Prereq: ECE 330 or Permission.

ECE 434 Antenna Principles and Design
3 credits
Maxwell's equations, vector potential theory, radiation patterns, antenna efficiency and bandwidth, polarization, dipole and loop antennas, line sources, patch antennas, lineal arrays, antenna systems, radar equation.
Prereq: ECE 330 or Permission .

ECE 440 Digital Systems Engineering
3 credits
Design of digital systems using a hardware description language and field-programmable gate arrays; projects emphasize a top-down design process using software tools; topics include datapath optimization, pipelining, static and dynamic memory, technology issues, intra-system communication, and design for testability.
Prereq: ECE 240, ECE 241, or Permission.

ECE 441 Advanced Computer Architecture
3 credits
Joint-listed with ECE 541. Cross-listed with CS 451, CS 551.
Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.
Prereq: CS 150, STAT 301, ECE 240, or Permission .

ECE 443 Distributed Processing and Control Networks
3 credits
This course has three major parts: real-time computing, distributed processing, and control networks. Analysis of hardware and software performance with respect to speed, accuracy, and reliability. Investigation of ways of maximizing the three essential processor resources: memory, CPU time, and input/output. Methods for writing error free programs and designing fault tolerant computing systems.
Prereq: ECE 340, ECE 341, ECE 350, and ECE 351.

ECE 444 Supervisory Control and Critical Infrastructure Systems
3 credits
Joint-listed with ECE 544. Cross-listed with CS 444, CS 544.
Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e.g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/yrs.)
Prereq: *Senior or Graduate standing in the College of Engineering* .

ECE 445 Introduction to VLSI Design
3 credits Principles of design of very large scale integrated circuits; CMOS logic design; transistor sizing and layout methodologies; intro to IC CAD tools.
Prereq: ECE 310, ECE 240 or permission.

ECE 449 Fault-Tolerant Systems
3 credits
Joint-listed with CS 449. Cross-listed wtih ECE 449.
Design, modeling, analysis and integration of hardware and software to achieve dependable computing systems employing on-line fault tolerance; theory and fundamental concepts of designing reliable systems; analytical evaluation techniques, faults and advances in ultra-reliable distributed systems, fault-tolerant software systems; case studies include the space Shuttle, Airbus, and Boeing fly-by-wire primary flight computers as well as systems in reliable data bases and financial markets. Additional projects and assignments reqd for grad cr.
Prereq: CS 240, ECE 441, or Permission .

ECE 450 Signals and Systems II
3 credits
Continuation of ECE 350. Two-sided Laplace transform. Relationships among Fourier series, Fourier transform, and Laplace transform. Feedback, modulation, filtering, sampling, state space analysis, and modeling of systems. Emphasis on practical applications of theory to solve engineering problems.
Prereq: ECE 350 and MATH 330.

ECE 452 Communication Systems
3 credits
Introduction to modern communication systems; baseband pulse and data communication systems; communication channels and signal impairments; filtering and waveform shaping in the time and frequency domain; carrier-modulation for AM and FM transmission; bandpass digital and analog communication systems; comparison of system performance. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: ECE 450 and (STAT 301 or MATH 451)

ECE 455 Information and Coding Theory
3 credits
Introduction to information theory; information content of messages; entropy and source coding; data compression; channel capacity data translation codes; fundamentals of error correcting codes; linear block and convolutional codes; introduction to trellis-coded modulation.
Prereq: MATH 330 and STAT 301.

ECE 460 Semiconductor Devices
3 credits
Introduction to semiconductor physics and basic semiconductor devices; intro to electro-optical devices.
Prereq: ECE 350.

ECE 462 Semiconductor Theory
3 credits
Joint-listed with ECE 562
Fundamental theory and behavior of modern semiconductor devices. Additional projects/assignments reqd for grad cr.
Prereq: ECE 460 or Permission.

ECE 465 Introduction to Microelectronics Fabrication
3 credits
Joint-listed with ECE 565
This course serves as an introduction to the fabrication of microelectronic devices. Topics include the basics of IC structures, clean room protocol, photolithography, film growth and deposition, as well as IC interconnect technologies. Additional projects/assignments required for graduate credit.
Prereq: ECE 310 .

ECE 469 Resilient Control of Critical Infrastructure
3 credits
Joint-listed with ECE 569
This course establishes a perspective on the unique challenges of automation in our society and provides insight on how an industrial control system works and how it can fail due to threats from cyber security, human error, and complex interdependencies. It also introduces concepts from the resilient controls community that attempt to make industrial control systems more resilient to these threats. Furthermore, it provides background to the vocabulary and fundamental concepts related to the variety of disciplines required for the effective management, control, and protection of critical infrastructure. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

ECE 470 Control Systems
3 credits
Cross-listed with ME 481.
Analysis and design of feedback control systems using frequency and time domain methods, and computer-aided design tools. Cooperative: open to WSU degree-seeking students.
Prereq:MATH 330
Prereq for Electrical Engineering and Computer Engineering majors: ECE 350
Prereq for Mechanical Engineering majors: ME 313.

ECE 476 Digital Filtering
3 credits
Design methods for recursive and non-recursive filters; frequency domain characteristics; computer-aided design; applications.
Prereq: ECE 450 .

ECE 477 Digital Process Control
3 credits
Cross-listed with CHE 445
Dynamic simulation of industrial processes and design of digital control systems. Coordinated lecture-lab periods. Recommended Preparation: CHE 444 (Recommended Preparation for EE majors: ECE 350).

ECE 480 EE Senior Design I
3 credits
The capstone design sequence for electrical engineering majors. Course topics include design, research, simulation, and experimental methods; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: ECE 240, ECE 241, ECE 310, ECE 311, ECE 320, ECE 321, ECE 330, ECE 331, ECE 340, ECE 341, ECE 350, ECE 351; or Permission
Coreq: STAT 301.

ECE 481 EE Senior Design II
3 credits
Gen Ed: Senior Experience
The capstone design sequence for electrical engineering majors. Course topics include design, research, simulation, and experimental methods; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: ECE 480 and STAT 301 or Permission.

ECE 482 Computer Engineering Senior Design I
3 credits
The capstone design sequence for computer engineering majors. Application of formal software and hardware design techniques, hardware/software interface considerations, project management; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: *CS 240, CS 270, ECE 240, ECE 241, ECE 310, ECE 311, ECE 340, ECE 341, ECE 350, and ECE 351, or Permission*
Coreq: *ECE 440 and STAT 301*.

ECE 483 Computer Engineering Senior Design II
3 credits
Gen Ed: Senior Experience
The capstone design sequence for computer engineering majors. Application of formal software and hardware design techniques, hardware/software interface considerations, project management; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i.e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.
Prereq: ECE 440 and ECE 482 and STAT 301; or Permission.

ECE 490 Near Space Engineering Leadership
1 credit, max 6
This course is for students in the Near Space Engineering program who are in the position of Flight Director, Assistant Flight Director, Project Systems Engineer, Launch and Recovery Manager, or leading one of the four flight engineering teams. The course emphasizes important leadership skills, including communication, planning and scheduling, and delegation. Students are expected to make oral technical presentations of goals, activities, progress, and accomplishments at technical meetings and conferences, work closely with research engineers and scientists in industry and NASA, and work with other high altitude scientific ballooning and near space engineering programs throughout the State. Recommended preparation: Prior experience and concurrent enrollment in University of Idaho Near Space Engineering Program.
Prereq: Permission .

ECE 491 Senior Seminar
0 credits
Technical topics, professional ethics, employment practice, and interviewing. One lecture a week. Graded P/F.

ECE 498 (s) Internship
Credit arranged.

ECE 499 (s) Directed Study
Credit arranged.

ECE 500 Master's Research and Thesis
Credit arranged.

ECE 501 (s) Seminar
Credit arranged.

ECE 502 (s) Directed Study
Credit arranged.

ECE 503 (s) Workshop
Credit arranged.

ECE 504 (s) Special Topics
Credit arranged.

ECE 505 (s) Professional Development
Credit arranged.

ECE 513 Radio-Frequency IC Design
3 credits
Joint-listed with ECE 413.
Radio frequency (RF) communications concepts, integrated circuit (IC) transceiver architectures, low-noise amplifier, mixers, passive devices and matching networks, oscillators, power amplifiers, phase-locked loops, and frequency synthesizers. Additional projects/assignments are required for graduate students. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 410 or Permission.

ECE 515 Analog Integrated Circuit Design
3 credits
Joint-listed with ECE 415
Analog integrated circuit (IC) analysis, design, simulation, and layout, advanced biasing techniques, voltage references and regulators, operational amplifiers, frequency compensation techniques, noise analysis in analog circuits, and continuous-time integrated circuit filter design. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 410 or Permission.

ECE 516 Image Sensors and Systems
3 credits
Joint-listed ECE 419
This course introduces various concepts and fundamentals related to semiconductor image sensors. Topics cover light production and detection, video image formats, image sensor characteristics and performance metrics, basic and advanced operation principals and types of semiconductor image sensors (CCD and CMOS), noise in imagers, image and color processing, and issues related to camera system design, integration and signal processing. Additional projects/assignments are required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: *ECE 310* .

ECE 517 Mixed Signal IC Design
3 credits
Joint-listed with ECE 517
Sample and hold (S/H) circuits, comparators, data-converter fundamentals, Nyquist-rate digital-to-analog converters (DAC) and analog-to-digital converters (ADC), over-sampling data converters, and phase-locked loops. Additional projects/assignments are required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 410 or Permission.

ECE 518 Introduction to Electronic Packaging
3 credits
Joint-listed with ECE 418
This course serves as an introduction to electronic packaging and "back-end" microelectronic processes. Topics include substrate design & fabrication, SMT & first level assembly, clean room protocol, thermal design, simulation, and process considerations. Additional project work will be required for students enrolled in 518. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 310.

ECE 520 Advanced Electrical Machinery
3 credits
Synchronous machines and transformers, machine transient and subtransient reactances, excitation and voltage regulation, power curves, transformer connections, impedance, harmonics, and impulse characteristics. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 422.

ECE 522 Induction Machines
3 credits
Winding theory, reference frame theory, induction machine models, complex vector methods, small signal analysis, induction machine capability, simulation, introduction to variable speed drives. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 350, ECE 422, or Permission.

ECE 523 Symmetrical Components
3 credits
Concepts of symmetrical components, sequence impedances of devices and lines, circuit equivalents for unbalanced faults, management during faults. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 422.

ECE 524 Transients in Power Systems
3 credits
Analysis and simulation of electromagnetic transients on electric power systems; switching transients; lightning transients; mitigation of transient overvoltages; surge protection; modeling power systems apparatus for transient studies. Cooperative: open to WSU degree-seeking students.
Prereq: *ECE 421* .

ECE 525 Power System Protection and Relaying
3 credits
Power systems protection fundamentals; dynamic response of current voltage measurement devices; numerical relay fundamentals; review of symmetrical components; application of overcurrent elements, distance elements and differential elements for the real time protection and monitoring of transmission, distribution and generation apparatus. Cooperative: open to WSU degree-seeking students.
Prereq: *ECE 422 or Permission* .

ECE 526 Protection of Power Systems II
3 credits
Protection of electrical equipment as related to electric power systems with emphasis on digital algorithms. Cooperative: open to WSU degree-seeking students. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 525 or Permission .

ECE 527 Dynamics and Control of AC Drives
3 credits
Review of machine modeling techniques and simulation methods, principles of power converters for motor drive applications; analytical modeling and dynamic behavior of machine-drive systems; modulation, regulation, and control techniques; simulation of drive systems; case studies.
Prereq: ECE 320 and ECE 470, or Permission.

ECE 528 Understanding Power Quality
3 credits
Electrical fundamentals in the context of power quality; origins and characterization of power quality problems on distribution systems; applications of standards; advanced ground techniques; case study approach to common situations.

ECE 529 Utility Applications of Power Electronics
3 credits
HVdc transmission, static VAr compensators, FACTS devices, Custom Power devices, electrical energy storage systems, power quality, harmonic compensation, and alternative energy supply interfacing.
Prereq: ECE 422.

ECE 530 Advanced Electromagnetic Theory I
3 credits
Maxwell's equations, potential theory, wave propagation and scattering, canonical problems, guided wave theory, antenna concepts, boundary value problems. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 432 or Permission.

ECE 531 Advanced Electromagnetic Theory II
3 credits
Boundary value problems in non-Cartesian systems, diffraction, perturbation techniques, variational techniques, wave transformations.
Prereq: ECE 530 or Permission .

ECE 533 Antenna Theory
3 credits
Maxwell's equations, reciprocity, equivalence theorems; wire antennas, antenna arrays, aperture antennas; analysis and design techniques; hardware considerations. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 432 or Permission.

ECE 541 Advanced Computer Architecture
3 credits
Joint-listed with ECE 441. Cross-listed with CS 451, CS 551.
Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.
Prereq: CS 150, STAT 301, ECE 240, or Permission .

ECE 544 Supervisory Control and Critical Infrastructure Systems
3 credits
Joint-listed with ECE 444. Cross-listed with CS 444, CS 544.
Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e.g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/yrs.)
Prereq: *Senior or Graduate standing in the College of Engineering*.

ECE 555 Information Theory
3 credits
Introduction to Shannon Theory; entropy, relative entropy, and mutual information; asymptotic equipartition; entropy rates of stochastic processes; data compression; channel capacity, differential entropy; the Gaussian channel, Lempel-Ziv coding, rate distortion theory.
Prereq: ECE 455 or Permission.

ECE 562 Semiconductor Theory
3 credits
Joint-listed with ECE 462
Fundamental theory and behavior of modern semiconductor devices. Additional projects/assignments reqd for grad cr.
Prereq: ECE 460 or Permission.

ECE 565 Introduction to Microelectronics Fabrication
3 credits
Joint-listed with ECE 465
This course serves as an introduction to the fabrication of microelectronic devices. Topics include the basics of IC structures, clean room protocol, photolithography, film growth and deposition, as well as IC interconnect technologies. Additional projects/assignments required for graduate credit.
Prereq: ECE 310 .

ECE 569 Resilient Control of Critical Infrastructure
3 credits
Joint-listed with ECE 469
This course establishes a perspective on the unique challenges of automation in our society and provides insight on how an industrial control system works and how it can fail due to threats from cyber security, human error, and complex interdependencies. It also introduces concepts from the resilient controls community that attempt to make industrial control systems more resilient to these threats. Furthermore, it provides background to the vocabulary and fundamental concepts related to the variety of disciplines required for the effective management, control, and protection of critical infrastructure. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

ECE 570 Random Signals
3 credits
Probability, random variables, and random signals in engineering systems; stochastic calculus, stationarity, ergodicity, correlation, and power spectra; propagation of random signals through linear systems; Kalman filter theory and applications. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 350, and STAT 301 or STAT 451, or Permission.

ECE 572 Linear System Theory
3 credits
Cross-listed with ME 580.
Linear spaces and linear operators; descriptions of dynamic systems; input-output descriptions; state-space concepts; canonical forms; controllability and observability; minimal realizations; application to control and general systems analysis; pole assignment; observers. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 470 or Equivalent.

ECE 574 Optimal Control Theory
3 credits
Intro to optimization, parameter optimization, optimization of dynamic systems, optimization of dynamic systems with path constraints, optimal feedback control and dynamic programming, linear quadratic regulators, second variation methods, singular control problems, differential games. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 572 or Permission .

ECE 579 Engineering Acoustics
3 credits
Cross-listed with ME 513.
Fundamentals of acoustics including wave theory; transmission through layers, generation and reception; low frequency models; application to sound measurement, transducers, loudspeaker cabinet design, and nondestructive testing; acoustic design project reqd. Additional projects/ assignments reqd for grad cr. ME 513 is a cooperative course available to WSU degree-seeking students.
Prereq: ENGR 240 or ECE 212, and MATH 310, or ME 313.

ECE 591 Electrical Engineering Research Colloquium
0 credits
Graded P/F. Weekly colloquia on topics of general interest in electrical engineering and related fields; speakers will be from UI Electrical Engineering Department, other departments on campus, WSU, the local community, and outside agencies and universities.

ECE 598 (s) Cooperative Internship
Credit arranged
Supervised internship in industry in professional engineering settings, integrating academic study with work experience; requires a final written report and possible additional requirements to be worked out with the faculty supervisor. Graded P/F.
Prereq: Permission .

ECE 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ECE 600 Doctoral Research and Dissertation
Credit arranged.

ENGINEERING MANAGEMENT (EM)

EM 404 (s) Special Topics
Credit arranged.

EM 502 (s) Directed Study
Credit arranged.

EM 504 (s) Special Topics
Credit arranged).

EM 510 Engineering Management Fundamentals
3 credits
Fundamental principles of engineering management addressing management theory applied to the engineering environment; management processes and techniques; attitudes that facilitate the leadership role of the engineering manager in an engineering organization.
Prereq: Instructor permission.

EM 550 Process Improvement Methods
3 credits
This course will examine a framework for delivering dramatic and sustained continuous improvement results through the integration of improvement methodologies such as Lean Six Sigma and Design for Lean Six Sigma (DFLSS).

EM 560 Project Risk Management
3 credits
Application of project risk assessment tools and techniques that help increase the probability of project success. Discover different approaches used by commercial and federal agencies to identify, assess, and quantify risks and their impacts on projects.
Prereq: Instructor Permission .

EM 570 Global Product Development
3 credits
Discussion of topics related to enabling effective global product development spanning the entire product development cycle from strategy development, through project execution, and ultimately post release product support. Rather than presenting a fixed methodology, this course will provide a framework for global development that can be adapted to specific environments.

EM 580 Technical Project Management
3 credits
Traditional project management approaches are typically structured around the five PMBOK (Project Management Book of Knowledge) process groups. This course will introduce the PMBOK process groups but then discuss five different project management life cycle (PMLC) models to manage a project. The topics discussed are appropriate for new project managers but also for experienced project managers who are looking to increase their awareness and improve their skills in differing PMLC models.

EM 582 Advanced Topics in Project Management
3 credits
Discussion and application of advanced project management topics beyond those prescribed by traditional project management approaches. Example topics include project portfolio management, multi-project management, use of Theory of Constraints (TOC) and Critical Chain approaches to drive improved results, and application of Agile practices. These approaches should be applicable to a wide variety of industries and functions.
Prereq: EM 580 or Instructor Permission.

EM 596 Capstone Integration
1 credit
Capstone integration of degree material in Engineering Management and comprehensive final exam.
Prereq: Permission .

EM 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ENGINEERING-GENERAL (ENGR)

ENGR 105 Engineering Graphics
2 credits
Freehand and computer aided drawing in pictorial and orthographic projection; section and auxiliary views; descriptive geometry; graphical presentation of data; scales, dimensioning, and measurements. Two lec and one 2-hr lab a wk.

ENGR 204 (s) Special Topics
Credit arranged .

ENGR 205 Near Space Engineering
1 credits, max 6)
Idaho RISE (Research Involving Student Engineers and Educators) is the NASA Idaho Space Grant Consortium student high-altitude scientific balloon program at the University of Idaho. RISE is a multidisciplinary program involving students from all departments in the College of Engineering, as well as Physics, Chemistry, Life Sciences, Education, and many other departments. Students in ENGR 205 will participate in the design, development, testing, flight and flight operations, recovery, and data analysis of balloon-borne science and engineering instrumentation flown to altitudes of 100,000 feet and higher. Recommended Preparation: Interest in space, aerospace science and engineering.

ENGR 206 Near Space Engineering II
1 credits, max 6
Idaho RISE (Research Involving Student Engineers and Educators) is the NASA Idaho Space Grant Consortium student high-altitude scientific balloon program at the University of Idaho. RISE is a multidisciplinary program involving students from all departments in the College of Engineering, as well as Physics, Chemistry, Life Sciences, Education, and many other departments. Students in ENGR 206 will participate in the design, development, testing, flight and flight operations, recovery, and data analysis of balloon-borne science and engineering instrumentation flown to altitudes of 100,000 feet and higher. Recommended Preparation: Interest in engineering, space, and aerospace sciences. (Spring only)

ENGR 210 Engineering Statics
3 credits
Principles of statics with engineering applications; addition and resolution of forces, vector algebra, moments and couples, resultants and static equilibrium, equivalent force systems, centroids, center of gravity, free body method of analysis, two and three dimensional equilibrium, trusses, frames, and friction. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 170.

ENGR 220 Engineering Dynamics
3 credits
Particle and rigid body kinematics and kinetics; rectilinear, curvilinear, and relative motion, equations of motion, work and energy, impulse and momentum, systems of particles, rotation, rotating axes, rigid body analysis, angular momentum, vibration, and time response. Cooperative: open to WSU degree-seeking students.
Prereq: ENGR 210.

ENGR 240 Introduction to Electrical Circuits
3 credits
Not open for credit to electrical engineering majors. Circuit analysis, transient and steady state behavior, resonant systems, system analysis, and power and energy concepts; elementary differential equations will be introduced to solve basic transient problems.
Prereq: MATH 175 and PHYS 211/PHYS 211L.

ENGR 320 Engineering Thermodynamics and Heat Transfer
3 credits
First and second laws of thermodynamics; thermodynamic processes; thermodynamic properties; flow processes; conversion of heat into work; conduction, convection, radiation, and heat exchangers. Recommended Preparation: ENGR 210 and MATH 310. Cooperative: open to WSU degree-seeking students.

ENGR 335 Engineering Fluid Mechanics
3 credits
Physical properties of fluids; fluid statics; continuity, energy, momentum relationships; laminar and turbulent flow; boundary layer effects; flow in pipes, open channels, and around objects. Cooperative: open to WSU degree-seeking students.
Prereq: ENGR 210, MATH 275.

ENGR 350 Engineering Mechanics of Materials
3 credits
Elasticity, strength, and modes of failure of engineering materials; theory of stresses and strains for ties, shafts, beams, and columns. Cooperative: open to WSU degree-seeking students.
Prereq: ENGR 210, MATH 175
Coreq: MATH 310.

ENGR 360 Engineering Economy
2 credits
Economic analysis and comparison of engineering alternatives. This class meets for 3 lectures per week for the first 10 weeks of the semester. This is a class that meets for 3 lectures per week for the first 10 weeks of the semester.
Prereq: Junior standing .

ENGR 398 (s) Internship
Credit arranged .

ENGR 404 (s) Special Topics
Credit arranged.

ENGR 428 Numerical Methods
3 credits
Cross-listed with MATH 428, PHYS 428
Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications.
Prereq: MATH 310.

ENGR 499 (s) Directed Study
Credit arranged.

ENGR 504 (s) Special Topics
Credit arranged.

ENGLISH (ENGL)

Vertically-related courses in this subject field are: ENGL 101-ENGL 102. In addition, for English majors ENGL 215 or permission of instructor also is a prerequisite or co-requisite to literature courses numbered 300 and above.

ENGL 101 Writing and Rhetoric I
3 credits
Gen Ed: English
Workshop on strategies for generating ideas for writing, for planning and organizing material, and for revising and editing; intended to prepare students for the demands of college writing, focusing on reading critically and incorporating source material. Graded P (pass)/N (repeat)/F (fail).
Coreq: Students with ACT scores 1-17, SAT reading scores 10-24, COMPASS scores 1-67, or no standardized test scores must concurrently enroll in ENGL 109.

ENGL 102 Writing and Rhetoric II
3 credits
Gen Ed: English
Applied principles of expository and argumentative essay writing, including summaries, critiques, and syntheses of texts, and the research essay; emphasis on clear, concise, and vigorous prose. Graded A/B/C/N (repeat)/F.
Prereq: ENGL 101 or Equivalent.

ENGL 109 Writing Studio
1 credit
Student-centered small-group tutorial sessions connected to the English 101 curriculum, supplemented by individualized support in the Writing Center. Graded Pass/Fail.
Coreq: ENGL 101 .

ENGL 175 Literature and Ideas
3 credits
Gen Ed: Humanities
Introduction to the terminology, techniques, and formal characteristics of literary genres. Intended to provide the general student and the beginning English major with basic experience in literary analysis.

ENGL 201 English Grammar: Key Concepts and Terms
1 credit
Study of grammar and grammatical concepts; terms and concepts drawn from traditional and transformational grammar; includes practice in sentence diagramming with connections drawn to other grammatical systems. Not an ESL course and not remedial. (Spring only).

ENGL 202 Intro to Professional Writing
3 credit
Introduction to the theory and practice of professional writing and its functions in workplace settings. In this rhetorically-based course, students will study and apply conventions to meet the needs of professional writing situations and begin to establish a professional identity by creating and learning how to maintain an electronic portfolio.
Prereq: ENGL 102 or equivalent.

ENGL 204 (s) Special Topics
credit arranged.

ENGL 207 (s) Persuasive Writing
3 credits
Intermediate course in the practices of writing to persuade with special emphasis on current issues and audience awareness; includes research-based writing.
Prereq: ENGL 102 or Equivalent.

ENGL 208 (s) Personal & Exploratory Writing
3 credits
Intermediate course in the practices of personal and exploratory writing; may include personal narrative and observation, autobiography, or extended reflection; special attention to prose style and voice; includes research-based writing.
Prereq: ENGL 102 or Equivalent.

ENGL 215 Introduction to English Studies
3 credits
The gateway course for all English majors, focusing on goals of and opportunities opened by the various branches of English studies, the practice of close reading, critical terminology and issues central to English studies, and basic research and writing practices necessary for literary study.
Prereq or Coreq: ENGL 102 .

ENGL 221 History of Film 1895-1945
3 credits
Gen Ed: Humanities, International
Introduction to film history; a comprehensive survey of the major film movements from the birth of the cinema to the mid 20th Century. Recommended preparation: ENGL 102.

ENGL 222 History of Film 1945-Present
3 credits
Gen Ed: Humanities, International
Introduction to modern film history; a comprehensive survey of the major film movements from the mid 20th Century to the contemporary cinematic scene. Recommended preparation: ENGL 102.

ENGL 230 Introduction to Film Studies
3 credits
Introduction to the study of film; survey of film aesthetics, form, theory, style, and analysis. Recommended Preparation: ENGL 102.

ENGL 231 Introduction to Screenwriting
3 credits
Cross-listed with JAMM 231
Introduction to the elements of screenwriting; students explore narrative techniques through the study of the short film form, using genre, developing characters, and advancing a story by effectively using cinematic language. Recommended Preparation: ENGL 230 .

ENGL 241 Intro to the Study of Language
3 credits
Cross-listed with ANTH 241.
Surveys of sound patterns, morphological processes and syntactic structures; questions of language acquisition, variation, and history; exercises from a variety of languages, with emphasis on American English.

ENGL 257 Survey of Western World Literature I
3 credits
Gen Ed: Humanities
Major texts reflecting development of Western thought and culture, Classical Greece to the Renaissance.
Prereq or Coreq: ENGL 102.

ENGL 258 Survey of Western World Literature II
3 credits
Gen Ed: Humanities
Major texts reflecting development of Western thought and culture, 17th century to the present.
Prereq or Coreq: ENGL 102.

ENGL 267 Survey of British Literature I
3 credits
Gen Ed: Humanities
Medieval, Renaissance, 17th Century, Restoration, and 18th Century Literature.
Prereq or Coreq: ENGL 102 .

ENGL 268 Survey of British Literature II
3 credits
Gen Ed: Humanities
Romantic, Victorian, Modern, and Contemporary literature.
Prereq or Coreq: ENGL 102 .

ENGL 277 Survey of American Literature I
3 credits
Gen Ed: Humanities
Indigenous beginnings to the American Civil War.
Prereq or Coreq: ENGL 102 .

ENGL 278 Survey of American Literature II
3 credits
Gen Ed: Humanities
Post-Civil War to contemporary writers.
Prereq or Coreq: ENGL 102 .

ENGL 281 Introduction to Women's Literature
3 credits
Introduction to significant texts by women writers, with an emphasis on major social and political changes. Focus on the intersections of gender, sexuality, race, and/or class.
Prereq: ENGL 102 .

ENGL 290 Introduction to Creative Writing
3 credits
Introduction to Creative Writing gives students practice closely reading and writing their own short samples of three genres of creative writing: poetry, fiction, and nonfiction. Emphasis is on the craft of writing these genres, explored through a range of sample readings and writing exercises, in both a lecture class and weekly small-group sessions. This class prepares students for any intermediate-level creative writing course.

ENGL 291 Beginning Poetry Writing
3 credits
Intro to techniques of writing poetry.

ENGL 292 Beginning Fiction Writing
3 credits
Intro to techniques of writing fiction.

ENGL 293 Beginning Nonfiction Writing
3 credtis
Intro to techniques of writing creative nonfiction.

ENGL 299 (s) Directed Study
Credit arranged.

ENGL 309 Rhetorical Style
3 credits
Analyze how style varies according to rhetorical genre and purpose; practice composing in multiple genres and styles.
Prereq: ENGL 102 and Sophomore Standing .

ENGL 310 Literary Theory
3 credits
Current trends and issues in literary theory, with practice in the application of theory to literary texts.
Prereq: ENGL 102 and ENGL 215; and ENGL 175, ENGL 257, or ENGL 258 .

ENGL 313 Business Writing
3 credits
Gen Ed: Communication
Principles and practice of effective business communication. Projects teach conventions of tone and style appropriate to the specific discourse situation in a variety of formats, including oral, written, visual, and multimedia genres.
Prereq: ENGL 102 or Equivalent; Sophomore standing.

ENGL 316 Environmental Writing
3 credits
Principles and practice in writing related to communicating information about scientific and environmental issues to public audiences through proposals, correspondence, and essays or reports.
Prereq: ENGL 102 or Equivalent; Junior standing or Permission.

ENGL 317 Technical Writing
3credits
Gen Ed: Communication
Principles and practice of effective technical communication. Projects teach conventions of tone and style appropriate to the specific discourse situation in a variety of formats, including oral, written, visual, and multimedia genres.
Prereq: ENGL 102 or Equivalent; Junior standing or Permission.

ENGL 318 Science Writing
3 credits
Cross-listed with JAMM 328
Principles and practices of making scientific concepts and work accessible to general audiences through multiple forms of media; also examines the ways in which media coverage of scientific issues shapes public opinion and policy.
Prereq:ENGL 102 and Sophomore Standing .

ENGL 322 Studies in Environmental Literature and Culture
3credits
Gen Ed: Humanities
Introduction to environmentally-oriented literature and other cultural texts, such as visual art, music, and film. Focus on British and American traditions of nonfiction nature writing, nature poetry, and environmental fiction, but may include work from other countries and regions.
Prereq: ENGL 102.

ENGL 329 (s) Studies in Literature and Film
3 credits, max 6
Study of both literature and film in considering with emphasis on a time period, theme, culture, or genre. Recommended Preparation: ENGL 230.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey .

ENGL 345 Studies in Shakespeare
3 credits
Gen Ed: Humanities
Study of selected texts representative of Shakespeare's work.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey.

ENGL 351 Studies in Renaissance and Seventeenth-Century Literature
3 credits
Offered in period survey, themes, or major authors.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey .

ENGL 356 Studies in Restoration and Eighteenth-Century Literature
3 credits
Offered in period survey, themes, or major authors.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey.

ENGL 365 Studies in Romantic Literature
3 credits
Offered in period survey, themes, or major authors.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey .

ENGL 366 Studies in Victorian Literature
3 credits
Offered in themes, genre studies, or major authors.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey .

ENGL 375 The Bible as Literature
3 credits
Gen Ed: Humanities
Cross-listed with RELS 375
Literary qualities of the Bible.
Prereq: ENGL 102.
Prereq or Coreq: ENGL 175 or EGNL 257 or ENGL 258.

ENGL 380 Studies in U.S. Ethnic Literatures
3 credits
Gen Ed: American Diversity
Emphasis on U.S. minority writers and reading across cultures; selections will vary from semester to semester.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey .

ENGL 382 Studies in Queer Literature
3 credits
Comparative study of significant LGBTQ+ texts, topics, and writers, with emphasis on understanding the queer experience inherent in landmark works of fiction, poetry, nonfiction, and drama.
Prereq: ENGL 102 .

ENGL 383 Studies in African American Literature
3 credits
Major themes and traditions in African American texts.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey.

ENGL 384 Studies in American Indian Literature
3 credits
Gen Ed: American Diversity
Cross-listed with AIST 484
Major themes and traditions in American Indian texts.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey .

ENGL 385 Studies in Global Anglophone Literatures
3 credits, max 6
Emphasis on literature from postcolonial Anglophone cultures and diasporic communities.
Prereq: ENGL 102
Coreq: One 200-level ENGL Survey .

ENGL 391 Intermediate Poetry Writing
3 credits
Intermediate poetry writing workshop; emphasis on workshop approach, development of portfolio, continued reading in poetry.
Prereq: ENGL 102 and ENGL 291; or Permission.

ENGL 392 Intermediate Fiction Writing
3credits
Intermediate fiction writing workshop; emphasis on workshop approach, development of portfolio, continued reading in fiction.
Prereq: ENGL 102 and ENGL 292; or Permission.

ENGL 393 Intermediate Nonfiction Writing
3 credits
Intermediate creative nonfiction; emphasis on workshop approach.
Prereq: ENGL 102 and ENGL 293; or Permission.

ENGL 400 (s) Seminar
3 credits, max arranged
Specialized focus on literature and theory; topics vary be semester.
Prereq: ENGL 102 and one 200-level ENGL Survey.

ENGL 401 Writing Workshop for Teachers
3 credits
Enrollment limited to juniors or seniors majoring or minoring in English or in secondary or elementary education programs. Develops students' writing abilities in a workshop setting adaptable to K-12 classrooms and includes theory and practice of teaching writing in elementary and secondary schools.
Prereq: ENGL 102.

ENGL 402 Internship in Tutoring Writing
3 credits
Theoretical and practical issues involved in tutoring writing; directed experience tutoring students across the disciplines. Graded P/F.
Prereq: ENGL 102 or Equivalent and Permission.

ENGL 404 (s) Special Topics
Credit arranged
Prereq: ENGL 102.

ENGL 407 Phonetics and Phonology
3 credits
Joint-listed with ENGL 507
This course explores issues in both first and second language acquisition focusing on language structure, use and development by monolingual and bilingual children. Graduate work will be assessed in accordance with graduate-level standards.
Prereq for ENGL 407: ENGL 241 .

ENGL 408 Language Acquisition and Development
3 credits
This course explores issues in both first and second language acquisition focusing on language structure, use and development by monolingual and bilingual children.
Prereq: ENGL 241 .

ENGL 413 ESL Meth I:Basic Oral/Aural Skills
3 credits
Joint-listed with ENGL 513
Survey of most widely used classroom techniques for developing speaking and listening skills in a second language; alternative innovative approaches. Additional projects/assignments reqd for grad cr. (Fall, Alt/yrs)
Prereq: ENGL 241 or Permission.

ENGL 414 ESL Methods II:Reading, Writing, and Special Purpose English
3 credits
Joint-listed with ENGL 514
Survey of most widely used classroom techniques for developing- reading and writing skills in a second language and teaching techniques to specialized professional programs. Additional projects/assignments reqd for grad cr. (Spring, Alt/yrs)
Prereq: ENGL 241 or Permission.

ENGL 419 Writing for the Web
3 credits
Written and multimodal composition in various digital media, potentially including but not limited to blogs, microblogs, and websites.
Prereq: At least one of the following courses: ENGL 202, ENGL 207, ENGL 208, ENGL 309, ENGL 313, ENGL 316, ENGL 317, ENGL 318, or ENGL 440. Courses in JAMM or COMM may also be accepted as pre- or co-reqs with instructor approval.

ENGL 432 Seminar in Film Theory and Criticism
3 credits
Seminar in major principles and methods of film theory and criticism as they relate to the development of film from 1890 to the present. Recommended Preparation: ENGL 230 or ENGL 310.
Prereq: ENGL 102 and one 200-level ENGL Survey .

ENGL 433 Chaucer
3 credits
Intro to Chaucer's poetical works.
Prereq: ENGL 102
Prereq or Coreq: ENGL 175 or ENGL 257 or ENGL 258.

ENGL 440 (s) Client-Based Writing
3 credits
Gen Ed: Senior Experience
A capstone course in which students work with clients to practice writing in professional genres. Required of students in the professional writing emphasis and writing minor. (Spring only)
Prereq: ENGL 102; and Senior standing or 24 credits of English courses .

ENGL 442 Introduction to Morphology and Syntax
3 credits
Structure and processes of English syntax; syntax as component of style.
Prereq: ENGL 241.

ENGL 444 Sociolinguistics
3 credits
Joint-listed with ENGL 544
Introduces the study of the relationship among language, society and culture. Specific topics include (1) native and nonnative variation of English, (2) language attitudes and ideology, (3) multilingualism, and (4) social class and gender. Provides practice in the methods for collecting and analyzing sociolinguistic data. Examines educational and political implications. Additional projects required for graduate credit. (Spring, alt/years)
Prereq: ENGL 241 or Permission .

ENGL 445 Literature for Adolescents
3 credits
Cross-listed with EDCI 445
Theory and practice of literature study in secondary schools, and appraisal of literature appropriate to the needs, interests, and abilities of adolescents.
Prereq: ENGL 102; and Enrollment in a program leading to certification in secondary English or Elementary Education (Elementary Education majors must have completed 6 cr of literature and EDCI 321; students in Secondary Education programs must have completed 9 cr of literature); or Permission.

ENGL 447 Screenwriting
3 credits
Cross-listed with JAMM 447 and THE 447. Joint-listed with ENGL 547. Introduction to Study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.
Prereq: ENGL 231 or JAMM 231; Permission.

ENGL 448 Psycholinguistics
3 credits
Cross-listed with PSYC 448
Survey of cognitive processes of language comprehension, language/speech production, and language acquisition. Recommended Preparation: ENGL 241 or ANTH 241, PSYC 101.
Prereq: ENGL 102.

ENGL 461 (s) Seminar in Poetry
3 credits, max 6
Seminar in modern, contemporary, global, or other periods or focuses of poetry and/or poetic theory. Topics vary by semester.
Prereq: ENGL 102 and one 200-level ENGL Survey .

ENGL 462 (s) Seminar in Fiction
3 credits, max 6
Seminar in modern, contemporary, global, or other periods or focuses of fiction and/or fiction theory. Topics vary by semester.
Prereq: ENGL 102 and one 200-level ENGL Survey .

ENGL 463 (s) Seminar in Nonfiction
3 credits, max 6
Seminar in the traditions and practices of nonfiction literature. Concentrations will vary by semester and may concern life writing, the essay, place study, or narrative account, or may emphasize other forms or particular periods of nonfiction.
Prereq: ENGL 102 and one 200-level ENGL Survey .

ENGL 473 (s) Seminar in Regional Literature
3 credits
Studies in the distinctive qualities of literature from various regions around the world, such as the American West, New England, the Caribbean, Anglophone Africa, etc. Emphasis on the particular sociohistorical contexts of a region and their influence on literature produced in that region. Region varies by semester.
Prereq: ENGL 102 and one 200-level ENGL Survey.

ENGL 475 (s) Studies in Literary Genres
3 credits
Specific focus on developments within poetry, fiction, non-fiction, drama and film.
Prereq: ENGL 102
Prereq or Coreq: ENGL 175 or ENGL 257 or ENGL 258 .

ENGL 477 Documentary Film
3 credits
Cross-listed with ENGL 477.
An examination of the historical development of nonfiction film and television. Study of documentary style and form, a consideration of social issues raised by documentary and a survey of significant practitioners and theorists of documentary film and television. Recommended preparation: ENGL 230.
Prereq:ENGL 102 and sophomore standing.

ENGL 481 (s) Seminar in Women's Literature
3 credits, max 6
Literature by women; genres, nationalities, and historical periods may vary from semester to semester.
Prereq: ENGL 102 and one 200-level ENGL Survey .

ENGL 482 (s) Seminar in Major Authors
3 credits, max 6
Comprehensive study of the works of a single author. Author varies by semester.
Prereq: ENGL 102 and one 200-level ENGL Survey.

ENGL 490 Senior Seminar
3 credits
Gen Ed: Senior Experience
A capstone course in which students use the skills learned in the major to explore a common topic, produce a substantial writing project and situate themselves and their work within literary, interdisciplinary and non-academic contexts. Required of English majors in literature and creative writing emphases.
Prereq: ENGL 102; and Senior standing or 24 credits of English courses.

ENGL 491 Advanced Poetry Writing
3 credits, max arranged)
Continuation of ENGL 391.
Prereq: ENGL 102 and ENGL 391 or Permission.

ENGL 492 Advanced Fiction Writing
3 credits, max arranged
Continuation of ENGL 392.
Prereq: ENGL 102 and ENGL 392 or Permission.

ENGL 493 Advanced Nonfiction Writing
3 credits, max arranged
Advanced creative nonfiction; emphasis on workshop approach.
Prereq: ENGL 102 and ENGL 393 or Permission.

ENGL 496 History of the English Language
3 credits
Evolution of the language from Proto-Germanic to American English. Recommended Preparation: ENGL 241. (Fall only)
Prereq: ENGL 102 .

ENGL 497 Practicum
1-3 credits, max 6)
Supervised experience in assisting in the teaching of an English course. Graded P/F.
Prereq: ENGL 102; and Upper-class standing and permission of instructor and director of undergraduate studies.

ENGL 498 (s) Internship
1-3 credits, max 6
Joint-listed with ENGL 598
Graded P/F. Supervised experience in professional uses of English. Additional projects/assignments reqd for grad cr. With advisor's approval, up to 3 credits of ENGL 498 may be counted toward the undergraduate English major.
Prereq: Permission of director of Graduate Studies or Director of Undergrad Studies, Department of English.

ENGL 499 (s) Directed Study
1-3 credits, max 3
Prereq: ENGL 102.

ENGL 500 Master's Research and Thesis
Credit arranged
Graded P/F.

ENGL 501 (s) Seminar
Credit arranged.

ENGL 502 (s) Directed Study
1-3 credits, max 3
Normally offered in English and American literature and in linguistics; may not duplicate course offerings. Graded P/F.
Prereq: Permission.

ENGL 503 (s) Workshop in Creative Writing
Credit arranged
Workshop for advanced writers; analysis of theory, composition, and techniques with the goal of extending technical skills of the student writer through study of professional writers¿ work. All applicants must submit typed manuscripts of their work at least 10 days before registration.
Prereq: Permission .

ENGL 504 (s) Special Topics
Credit arranged.

ENGL 505 (s) English Studies Professional Development
1-3 credits, max 6
Graded P/F. Coursework designed to enhance pedagogical skills in teaching writing and literature.
Prereq: Permission.

ENGL 506 Composition Theory
3 credits
Critical examination of theory, pedagogy, and research in composition studies.

ENGL 507 Phonetics and Phonology
3 credits
Joint-listed with ENGL 407
This course explores issues in both first and second language acquisition focusing on language structure, use and development by monolingual and bilingual children. Graduate work will be assessed in accordance with graduate-level standards.
Prereq for ENGL 407: ENGL 241 .

ENGL 508 MAT Project
3 credits
Graded P/F.

ENGL 510 (s) Studies in Linguistics
3 credits, max 12
Topics such as phonology, computer assisted language learning, material development, corpus linguistics, or the application of linguistics to the teaching of English literature or composition.
Prereq: Permission.

ENGL 511 (s) Studies in Critical Theory
3 credits, max 12
Various schools of critical theory, normally offered in historical survey or by theoretical perspective. (Alt/yrs)
Prereq: Permission.

ENGL 513 ESL Methods I: Basic Oral/Aural Skills
3 credits
Joint-listed with ENGL 413
Survey of most widely used classroom techniques for developing speaking and listening skills in a second language; alternative innovative approaches. Additional projects/assignments reqd for grad cr. (Fall, Alt/yrs)
Prereq: ENGL 241 or Permission.

ENGL 514 ESL Methods II: Reading, Writing, and Special Purpose English
3 credits
Joint-listed with ENGL 414
Survey of most widely used classroom techniques for developing- reading and writing skills in a second language and teaching techniques to specialized professional programs. Additional projects/assignments reqd for grad cr. (Spring, Alt/yrs)
Prereq: ENGL 241 or Permission.

ENGL 515 ESL Teaching Practicum
3 credits
Organization and teaching of an ESL course under direction of practicum instructor. (Spring only)
Prereq: Permission.

ENGL 516 Intercultural Communication
3 credits
In-depth examination of major issues related to communication across cultures: communication theory, linguistic relativity, ethnography of speech, crosscultural rhetoric, and nonverbal communication. (Alt/yrs)
Prereq: ENGL 241 or Permission.

ENGL 517 Introduction to Applied Linguistics
3 credits
Theory and practice of comparing and contrasting linguistic systems as basis for preparing instructional materials. (Alt/yrs)
Prereq: ENGL 241 or Permission .

ENGL 518 Advanced English Grammar
3 credits
In-depth linguistic analysis of English grammar, giving special emphasis to morphology and syntax. (Alt/yrs)
Prereq: ENGL 517 or Permission .

ENGL 521 MA-TESL Comprehensive Exam
1 credits, max 2
Registration for this course admits the student to weekly review sessions in preparation for the MA-TESL comprehensive exam and culminates with the two-part exam (linguistics and language pedagogy) given late in the semester. Graded P (pass)/F (fail). Recommended preparation: ENGL 507, ENGL 510, ENGL 513, ENGL 517, and ENGL 518.

ENGL 522 Communication for Science Professionals
3 credits
Development of professional skills in oral and written communication about science, policy, and technology. A core course for Professional Science Masters students; open to other graduate students and advanced undergraduates.

ENGL 523 Composition Pedagogy: Theory and Practice
3 credits
Introduction to pedagogical theory, scholarship and practices essential to teaching college-level writing.

ENGL 524 Descriptive Linguistics
3 credits
Examines the methods linguists use to describe human languages and focuses on the study of phonetics, phonology, morphology, syntax, semantics, and pragmatics.

ENGL 531 Traditions - Fiction
3 credits
An in-depth study of the short story as a literary genre, offering fiction writers a deeper historical context in which to position their own work, as well as intensive practice in the critical analysis of fiction writing craft.
Prereq: Graduate standing in the Department of English; or permission .

ENGL 532 Traditions - Nonfiction
3 credits
An in-depth study of the essay as a literary genre, offering nonfiction writers a deeper historical context in which to position their own work, as well as intensive practice in critical analysis of essay writing craft.
Prereq: Graduate standing in the Department of English; or permission .

ENGL 533 Traditions – Prosody & Forms
3 credits
An in-depth study of historical and traditional prosodies and poetic forms in English, offering poets and students of poetry a better understanding of the mechanical workings of poetry, and intensive practice in critical analysis of poetic forms.
Prereq: Graduate standing in the Department of English; or permission .

ENGL 544 Sociolinguistics
3 credits
Joint-listed with ENGL 444
Introduces the study of the relationship among language, society and culture. Specific topics include (1) native and nonnative variation of English, (2) language attitudes and ideology, (3) multilingualism, and (4) social class and gender. Provides practice in the methods for collecting and analyzing sociolinguistic data. Examines educational and political implications. Additional projects required for graduate credit. (Spring, alt/years)
Prereq: ENGL 241 or Permission .

ENGL 545 Discourse Analysis
3 credits
Introduces students to the major concepts and methods of discourse analysis, including the ethnography of communication, pragmatics, conversational analysis, and speech act theory.

ENGL 547 Screenwriting
3 credits
Joint-listed with ENGL 447.
Introduction to Study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.
Prereq: ENGL 231 or JAMM 231; Permission.

ENGL 550 (s) Studies-19th Cent British Lit
3 credits, max 12)
Normally offered in survey of Romantic literature, survey of Victorian literature, genre studies, and major author(s).

ENGL 551 Theories of Second/Additional Language Acquisition
3 credits
Examines how languages are learned by young adults in naturalistic and instructional settings.

ENGL 560 (s) Studies in American Literature Before 1900
3 credits, max 12
Normally offered in period survey, genre studies, and major author(s). (Alt/yrs)

ENGL 570 (s) Studies in 20th-21st Centuries British & American Literature
3 credits, max 12
Normally offered in period survey, genre studies, and major author(s).

ENGL 581 Techniques of Poetry
3 credits, max arranged
A substantial and highly analytical examination of the art and craft of poetry, from a writerly perspective.
Prereq: Admission to the MFA in Creative Writing program or instructor permission.

ENGL 582 Techniques of Fiction
3 credits, max arranged
A substantial and highly analytical examination of the art and craft of fiction, from a writerly perspective.
Prereq: Admission to the MFA in Creative Writing program or instructor permission.

ENGL 583 Techniques of Nonfiction
3 credits, max arranged
A substantial and highly analytical examination of the art and craft of nonfiction, from a writerly perspective.
Prereq: Admission to the MFA in Creative Writing program or instructor permission.

ENGL 591 MFA Poetry Workshop
3 credits, max arranged
Advanced poetry writing workshop.
Prereq: Admission to the MFA in Creative Writing program or instructor permission.

ENGL 592 MFA Fiction Workshop
3 credits, max arranged
Advanced fiction writing workshop.
Prereq: Admission to the MFA in Creative Writing program or instructor permission.

ENGL 593 MFA Nonfiction Workshop
3 credits, max arranged
Seminar on the evolving genre of "literary non-fiction": using modes of fiction, drama, and poetry for nonfictive aims, such as memoirs or autobiography, travel narrative, and character sketch; workshop on participants' writing in the genre.
Prereq: Admission to the MFA in Creative Writing program or instructor permission.

ENGL 595 MFA Novel Workshop
3 credits, max 6
A two-semester intensive seminar/workshop on the craft of novel writing, which includes directed writing, individual conferencing, critical analysis of exemplary novels, as well as critical response to peer work. Students will make substantial progress toward the completion of a novel of publishable quality.
Prereq: Admission to the MFA in Creative Writing program or instructor permission .

ENGL 596 MFA Long Form Nonfiction Workshop
3 credits, max 6
A two-semester intensive seminar/workshop on the craft of book-length nonfiction writing, which includes directed writing, individual conferencing, critical analysis of exemplary texts, as well as critical response to peer work. Students will make substantial progress toward the completion of a book of publishable quality.
Prereq: Graduate standing and a major in Creative Writing; or permission of the instructor .

ENGL 597 (s) Practicum
1-3 credits, max 3.

ENGL 598 (s) Internship
1-3 credits, max 6
Joint-listed with ENGL 498
Graded P/F. Supervised experience in professional uses of English. Additional projects/assignments reqd for grad cr. With advisor's approval, up to 3 credits of ENGL 498 may be counted toward the undergraduate English major.
Prereq: Permission of director of Graduate Studies or Director of Undergrad Studies, Department of English.

ENGL 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ENTOMOLOGY (ENT)

ENT 204 (s) Special Topics
Credit arranged.

ENT 299 (s) Directed Study
Credit arranged.

ENT 322 General and Applied Entomology
4 credits
Identification, biology, and importance of insects and related arthropods to humans and agriculture; basic principles of arthropod pest management. Three lec and one 3-hr lab a wk.

ENT 398 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: ENT 322 or Permission .

ENT 400 (s) Seminar
Credit arranged.

ENT 404 (s) Special Topics
Credit arranged.

ENT 411 Veterinary & Medical Entomology
3 credits
Joint-listed with ENT 511
This course will explore why insects are such efficient disease vectors, how blood feeding evolved, the impact of insects and related arthropods and vector-borne diseases on humans and animals worldwide, and what is being done to combat the resurgence of many of these diseases. Offered in spring semester in odd years.
Prereq: BIOL 115 and EPPN 154 OR BIOL 250 .

ENT 438 Pesticides in the Environment
3 credits
Gen Ed: Senior Experience
Cross-listed with PLSC 438 and SOIL 438
Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Recommended Preparation: CHEM 275.

ENT 440 Insect Identification
4 credits
Joint-listed with ENT 540
Survey of approximately 200 major families; collecting and preservation techniques. For graduate credit, an additional 50 families and selected subfamilies and genera will be covered and a term paper is required. Two lectures and two 2-hr labs a week; two 1-day field trips. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: ENT 322 or Permission .

ENT 441 Insect Ecology
3 credits
Joint-listed with ENT 541
Population and community dynamics set in a systems framework; theory and applications in natural and altered systems. Requirements for graduate credit include a longer (10 vs. 5 pages), more synthetic term paper, and each 500-level student will lead a web-based or in-class discussion on a research paper of their choice. Two 1-day field trips. Recommended Preparation: General ecology. Cooperative: open to WSU degree-seeking students.
Prereq: ENT 322 or Permission .

ENT 469 Introduction to Forest Insects
2 credits
Roles and impacts of insects within forest ecosystems. Current management techniques of arthropod pests (insects and mites) in natural and managed forest systems. Interactions of arthropods with other agents of forest disturbance (fire and fungi). Identification of some common arthropod pests of Rocky Mountain forests.
Prereq: FOR 221 or REM 221 .

ENT 476 Medical Parasitology
3 credits
Joint-listed with ENT 576
This course will explore the biology of eukaryotic parasites as they impact human health. Topics will include blood, gastrointestinal, and multi-organ parasites. The life cycles, clinical importance, global impact, and cutting edge research on these parasites will be reviewed. Offered in spring semester in even years.
Prereq: EPPN 154 OR BIOL 250 and BIOL 310 or BIOL 312 .

ENT 481 Arthropod and Nematode Physiology
3 credits
Joint-listed with ENT 580
This course will compare and contrast fundamental physiological systems of insects, related arthropods, and nematodes, including those of medical, veterinary, agricultural, and ecological importance as well as those that have been established as critically important model organisms for biology. Course will be taught in the fall semester of odd years.
Prereq: BIOL 115 and EPPN 154 OR BIOL 250 .

ENT 499 (s) Directed Study
Credit arranged.

ENT 500 Master's Research and Thesis
Credit arranged.

ENT 501 (s) Seminar
Credit arranged.

ENT 502 (s) Directed Study
Credit arranged.

ENT 504 (s) Special Topics
Credit arranged.

ENT 511 Veterinary & Medical Entomology
3 credits
Joint-listed with ENT 411
This course will explore why insects are such efficient disease vectors, how blood feeding evolved, the impact of insects and related arthropods and vector-borne diseases on humans and animals worldwide, and what is being done to combat the resurgence of many of these diseases. Offered in spring semester in odd years.

ENT 540 Insect Identification
4 credits
Joint-listed with ENT 440
Survey of approximately 200 major families; collecting and preservation techniques. For graduate credit, an additional 50 families and selected subfamilies and genera will be covered and a term paper is required. Two lectures and two 2-hr labs a week; two 1-day field trips. Cooperative: open to WSU degree-seeking students. (Alt/yrs)

ENT 541 Advanced Insect Ecology
3 credits
Joint-listed with ENT 441
Population and community dynamics set in a systems framework; theory and applications in natural and altered systems. Requirements for graduate credit include a longer (10 vs. 5 pages), more synthetic term paper, and each 500-level student will lead a web-based or in-class discussion on a research paper of their choice. Two 1-day field trips. Recommended Preparation: General ecology. Cooperative: open to WSU degree-seeking students.
Prereq: ENT 322 or Permission .

ENT 549 Insect-Plant Interactions
3 credits
Ecology, evolution, and mechanisms of the interactions between insects and plants. Requirements for graduate credit include formal report of field study, term paper. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: ENT 322 .

ENT 569 Advanced Forest Entomology
3 credits
Methods and applications of biological and economic evaluation and control strategies of forest insect populations in relation to pest management programs. Recommended preparation: ENT 469. (Fall, alt/yrs)

ENT 576 Medical Parasitology
3 credits
Joint-listed with ENT 476
This course will explore the biology of eukaryotic parasites as they impact human health. Topics will include blood, gastrointestinal, and multi-organ parasites. The life cycles, clinical importance, global impact, and cutting edge research on these parasites will be reviewed. Offered in spring semester in even years.

ENT 581 Arthropod and Nematode Physiology
3 credits
Joint-listed with ENT 481
This course will compare and contrast fundamental physiological systems of insects, related arthropods, and nematodes, including those of medical, veterinary, agricultural, and ecological importance as well as those that have been established as critically important model organisms for biology. Course will be taught in the fall semester of odd years.

ENT 597 (s) Practicum
Credit arranged.

ENT 598 (s) Internship
Credit arranged
Prereq: ENT 322 or Permission .

ENT 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ENT 600 Doctoral Research and Dissertation
Credit arranged.

ENTOMOLOGY, PLANT PATHOLOGY, AND NEMATOLOGY (EPPN)

EPPN 110 Introduction to Global Disease Ecology
3 credits
Introduction to the Global Disease Ecology major. Course will discuss research and internship opportunities, and potential career paths in human, animal, and plant health. Focus on communication, ethics and the nature of science.

EPPN 154 Microbiology and the World Around Us
3 credits
Gen Ed: Natural and Applied Sciences
The purpose of this introductory microbiology course is to provide students with the basic understanding of the biology of microorganisms (emphasis on prokaryotes) and their interaction and importance in the environment. Topics addressed will include the structure, function, physiology, and the functional diversity of microorganims (Bacteria, Archaea, fungi, and viruses).

EPPN 155 Microbiology and the World Around Us: Laboratory
1 credit
Gen Ed: Natural and Applied Sciences
Introductory Microbiology Laboratory is a course designed to complement the topics covered in Microbiology and the World Around Us (EPPN 154). The laboratory experience is aimed at introducing non-science majors to the skills of scientific observation, interpretation, and logical conclusion that are the basis for hypothesis testing using basic microbial techniques as a model.
Coreq: EPPN 154 .

EPPN 220 Global Disease Ecology Seminar
3 credits
Seminar leading to development of the research proposal and academic plan for the Global Disease Ecology major. The final product will be the research proposal prepared by the students and approved by their research mentor.
Prereq: EPPN 110 .

EPPN 440 Research Practicum
3 credits
Senior capstone research experience for students working toward a BS. in Global Disease Ecology. Students will work one on one with a faculty mentor, or outside mentor plus a faculty co-mentor, to pursue research questions developed in EPPN 220, Global Disease Ecology Seminar.
Prereq: EPPN 110 and EPPN 220 .

EPPN 500 (s) Master's Research and Thesis
Credit arranged.

EPPN 506 Biology of Vector-borne Diseases Workshop
3 credits
The goal of the course is to create a knowledge network for a diverse community of practitioners that applies interventions to plant, animal and human vector-borne diseases. The course fits into graduate degree programs and academic certificate programs in CALS, CNR, COS and the College of Engineering. The course features sessions on selected themes developed by instructors from different areas of expertise. The instructors will present short talks, relevant discussion questions, podcasts and case studies. Themes of the course will focus on the common biological and abiotic drivers of diseases that are carried by vectors, and will include diseases of humans, animals and plants. Typical subject areas include, but are not limited to: 1) host and pathogen biology and heterogeneity, 2) virulence and resistance mechanisms, 3) diagnostics, 4) containment, 5) disease ecology, 6) global change, 7) emergence and re-emergence of pathogens and 8) various methods of controlling disease.
Prereq: Permission .

EPPN 600 (s) Doctoral Research and Dissertation
Credit arranged.

ENTREPRENEURSHIP (ENTR)

ENTR 204 (s) Special Topics
Credit arranged.

ENTR 298 (s) Internship
1-3 credits, max 6.

ENTR 299 (s) Directed Study
Credit arranged.

ENTR 398 (s) Internship
1-3 credits, max 6.

ENTR 404 (s) Special Topics
Credit arranged.

ENTR 414 Entrepreneurship
3 credits
This course is intended to provide an overview of the entrepreneurship phenomenon and the process of identifying and commercializing an opportunity. Primary emphasis will be placed on recognizing and creating an opportunity, feasibility analysis, elements of the business plan, and sources of start-up funds. As such, this class will provide the foundation for developing a business plan for a real entrepreneurial venture in subsequent semesters.

ENTR 415 New Venture Creation
3 credits
The primary purposes of this course are to help diverse teams of students create business plans detailing the operational and financial aspects of a proposed product innovation, and where appropriate, prepare teams to compete in the VIEW-sponsored Business Plan Competition. In order to accomplish this, students will learn how to research and effectively communicate all aspects of a typical business plan, including, but not necessarily limited to: industry analysis, competitor analysis, target marketing, sales strategy, risk assessment, legal considerations, operational plan, management and staffing plan, financial plan and executive summary. The intention is to have the class be a practical-based "laboratory" much of the time, with occasional lectures, demonstrations, guest speakers, relevant videos, and student presentations throughout the term.
Prereq: Senior standing or Permission.

ENTR 499 (s) Directed Study
Credit arranged.

ENVIRONMENTAL ENGINEERING (ENVE)

ENVE 404 (s) Special Topics
Credit arranged.

ENVE 500 Master's Research and Thesis
Credit arranged.

ENVE 501 (s) Seminar
Credit arranged.

ENVE 502 (s) Directed Study
Credit arranged.

ENVE 504 (s) Special Topics
Credit arranged.

ENVE 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ENVIRONMENTAL SCIENCE (ENVS)

ENVS 101 Introduction to Environmental Science
3 credits
Gen Ed: Natural and Applied Sciences
Introduction to basic principles in the biological, physical, and social science areas of environmental science.

ENVS 102 Field Activities in Environmental Sciences
1 credit
Gen Ed: Natural and Applied Sciences
Field studies for ENVS 101. Field demonstrations on waste management, water, air pollution, and the ecosystem. Field trips required.
Prereq or Coreq: ENVS 101.

ENVS 200 (s) Seminar
Credit arranged.

ENVS 225 (s) International Environmental Issues Seminar
3 credits
Gen Ed: International
Cross-listed with IS 225.
Designed for individuals who have an interest in understanding environmental issues from a global perspective. The course focuses on various social and physical issues related to the environment and natural resources using human population dynamics as a backdrop. EnvS 101 recommended. (Spring only)

ENVS 299 (s) Directed Study
Credit arranged.

ENVS 386 Social-Ecological Systems
3 credits
Cross-listed with NRS 386.
Social-ecological systems are comprised of interconnected social, economic, and environmental components. Explore social-ecological systems, frameworks and fundamental principles of sustainability in social-ecological systems by examining theory and practice in case studies. Topics may include natural resource scarcity and human conflict, ecosystem service provision, management, and conservation, and land tenure, rights and justice relating to human access to natural resources.

ENVS 400 (s) Seminar
Credit arranged
Prereq: Junior standing.

ENVS 404 (s) Special Topics
Credit arranged.

ENVS 405 (s) Professional Development
Credit arranged.

ENVS 409 Principles of Environmental Toxicology
3 credits
Cross-listed with FS 409. Joint-listed with ENVS 509.
Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Students registering for FS 509 are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251.

ENVS 415 Environmental Lifecycle Assessment
3 credits
Joint-listed with ENVS 515.
Environmental life cycle assessment is the study of the environmental impacts resulting from the human production of goods and services from raw material acquisition through ultimate disposition. The class covers the basic concepts of life cycle assessment including definition of system boundaries, inventory of energy and material inputs and resultant emissions, assessment of impacts on human health and the environment, and interpretation of results. Recommended preparation: basic physical and biological sciences and familiarity with spreadsheet programs such as Excel. Additional assignment/projects required for graduate credit.

ENVS 428 Pollution Prevention
3 credits
Basic concepts of pollution prevention and waste minimization; pollution prevention strategies and case studies for solid waste, hazardous waste, water and energy use, and air pollution. (Fall only)

ENVS 429 Environmental Audit
3 credits
Details on a variety of equipment and processes used by business in order to decrease generation of solid and hazardous waste. (Fall only)

ENVS 436 Principles of Sustainability
3 credits
Cross-listed with FS 436. Joint-listed with ENVS 536.
Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: Junior or higher standing .

ENVS 446 Drinking Water and Human Health
3 credits
Joint-listed with ENVS 546
Understand the characterization, testing, and treatment of chemical, microbial and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects and protection of municipal, community, and private well systems. (Spring, Alt/yrs)

ENVS 450 Environmental Hydrology
3 credits
Cross-listed with SOIL 450
Carries no credit after BE 355 or CE 325. Comprehensive understanding of the hydrologic processes associated with the environmental processes. Includes components of the hydrologic cycle, analysis of precipitation and run off, evapotranspiration, routing, peak flow, infiltration, soil and water relationships, snowmelt, and frequency analysis. (Spring only)
Prereq: MATH 170 .

ENVS 475 Local & Regional Env Planning
3 credits
Cross-listed with NRS 475.
This course focuses on environmental planning by governments, nonprofit organizations, and collaborative partnerships at the local and regional level. Students will study a variety of planning approaches, such as community visioning and policy and management tools. Topics will include planning for public health, natural areas, working landscapes, and the built environment.
Prereq: Junior or Senior standing or permission.

ENVS 479 Introduction to Environmental Regulations
3 credits
Joint-listed with ENVS 579
Interpretation and implementation of local, state, and federal environmental rules; introduction to environmental regulatory process; topics include regulatory aspects of environmental impact assessment, water pollution control, air pollution control, solid and hazardous waste, resource recovery and reuse, toxic substances, pesticides, occupational safety and health, radiation, facility siting, environmental auditing and liability. Additional projects/assignments reqd for grad cr. (Fall only)

ENVS 482 Natural Resource Policy and Law
3 credits
Joint-listed with ENVS 582
Course offered only at the University of Idaho at Idaho Falls.
Examination of U.S. natural resource policy and law including historical contexts and current policies and laws. Additional projects/assignments reqd for grad cr. Recommended Preparation: an undergraduate course in political science. (Spring, Alt/yrs)

ENVS 484 History of Energy
3 credits
Covers the history of humanity's relationship to energy. Takes a historical approach beginning with ancient sources of energy, the discovery and exploitation of coal and the industrial revolution, the critical importance of oil and its derivatives, natural gas, nuclear and renewables. Finishes with a look to possible future energy sources.

ENVS 485 Energy Efficiency and Conservation
3 credits
Includes aspects of science, policy, and economics of energy use and efficiency measures. Considers use trends and existing and potential efficiencies primarily on a national scale with some consideration of both global and local situations. Focuses on residential and transportation energy with some coverage of commercial and industrial energy use.

ENVS 497 (s) Senior Research
2-4 credits, max 4)
Gen Ed: Senior Experience
Open only to majors in environmental science. Preparation of proposal, poster, formal presentation and written thesis or report based on research or project conducted with a faculty member. Research addresses an environmental problem using laboratory, field, or library techniques.
Prereq: Senior standing
Prereq or Coreq: ENGL 316 or ENGL 317 .

ENVS 498 (s) Internship
Credit arranged.

ENVS 499 (s) Directed Study
Credit arranged.

ENVS 500 Master's Research and Thesis
Credit arranged.

ENVS 501 (s) Seminar
Credit arranged.

ENVS 502 (s) Directed Study
Credit arranged.

ENVS 504 (s) Special Topics
Credit arranged.

ENVS 505 (s) Professional Development
Credit arranged.

ENVS 509 Principles of Environmental Toxicology
3 credits
Cross-listed with FS 509. Joint-listed with ENVS 409.
Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Students registering for FS 509 are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251.

ENVS 515 Environmental Lifecycle Assessment
3 credits
Joint-listed with ENVS 415.
Environmental life cycle assessment is the study of the environmental impacts resulting from the human production of goods and services from raw material acquisition through ultimate disposition. The class covers the basic concepts of life cycle assessment including definition of system boundaries, inventory of energy and material inputs and resultant emissions, assessment of impacts on human health and the environment, and interpretation of results. Recommended preparation: basic physical and biological sciences and familiarity with spreadsheet programs such as Excel. Additional assignment/projects required for graduate credit.

ENVS 536 Principles of Sustainability
3 credits
Cross-listed with FS 536. Joint-listed with ENVS 436.
Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: Junior or higher standing .

ENVS 541 Sampling and Analysis of Environmental Contaminants
3 credits
Covers the sampling and analysis of environmental contaminants from a statistical perspective. Includes designing sampling plans for environmental studies, statistically analyzing environmental data, and touches on more advanced techniques such as time series analysis and censored data. (Fall only)
Prereq: STAT 251 .

ENVS 546 Drinking Water and Human Health
3 credits
Joint-listed with ENVS 446
Understand the characterization, testing, and treatment of chemical, microbial and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects and protection of municipal, community, and private well systems. (Spring, Alt/yrs)

ENVS 552 Environmental Philosophy
3 credits
Cross-listed with PHIL 552
Philosophical examination of various ethical, metaphysical, and legal issues concerning humans, nature, and the environment; issues covered may include biodiversity and species protection, animal rights, radical ecology, environmental racism, wilderness theory, population control, and property rights. Additional projects/assignments required for graduate credit.

ENVS 577 Law, Ethics and the Environment
3 credits
Cross-listed with AGEC 577
Examines the laws and related ethical questions pertaining to agricultural and natural resource issues. Graduate credit includes special projects and additional discussion meetings. Recommended Preparation: BLAW 265.
Prereq for ENVS 577: Graduate standing and FOR 235 or POLS 364; or Permission.

ENVS 579 Introduction to Environmental Regulations
3 credits
Joint-listed with ENVS 579
Interpretation and implementation of local, state, and federal environmental rules; introduction to environmental regulatory process; topics include regulatory aspects of environmental impact assessment, water pollution control, air pollution control, solid and hazardous waste, resource recovery and reuse, toxic substances, pesticides, occupational safety and health, radiation, facility siting, environmental auditing and liability. Additional projects/assignments reqd for grad cr. (Fall only)

ENVS 582 Natural Resource Policy and Law
3 credits
Joint-listed with ENVS 482
Offered only at the University of Idaho at Idaho Falls.
Examination of U.S. natural resource policy and law including historical contexts and current policies and laws. Additional projects/assignments reqd for grad cr. Recommended Preparation: an undergraduate course in political science. (Spring, Alt/yrs)

ENVS 598 (s) Internship
Credit arranged.

ENVS 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ENVS 600 Doctoral Research and Dissertation
Credit arranged.

ENVS 604 (s) Special Topics
Credit arranged
Prereq: Enrollment in a Doctoral Program and Permission.

EXEC MASTER IN BUSINESS ADMIN (EMBA)

EMBA 501 (s) Seminar
credit arranged
Seminar.

EMBA 502 (s) Directed Study
credit arranged
Directed Study.

EMBA 509 Team Building & Group Dynamics
1 credit
Design and development of work groups and teams; influences, issues, and problems affecting team productivity.

EMBA 510 Summer Integrative Experience
3 credits
Participation in an integrative project of the students own design in consultation with faculty. Possible topics include international study and exchange, social marketing, community outreach, and research writing for publication.

EMBA 512 The External Context of Business
3 credits
This course examines the economic, social, technological, legal, and competitive environments in which organizations operate, with emphasis on the interfaces between business, society, and the natural environment Frameworks and tools for analyzing this complex organizational context will be introduced, with special attention given to how this context creates opportunities and risks for today's organizations.

EMBA 514 Financial Reporting and Financial Management
3 credits
Introduction to financial accounting, financial statement analysis, and capital budgeting. Employs the tools of accounting and finance to help managers make short-term and long-term decisions. Topics include the role of financial reporting, analysis and auditing in the capital markets, long-term financing through capital structure management, and working capital management.

EMBA 516 Strategic Business Communication
1 credit
The ability to communicate well is an essential component of effective leadership. This course develops the student's ability to communicate important organizational messages effectively to both internal and external audiences with the goal of becoming a better leader.

EMBA 517 Ethical Leadership
1 credit
Examines the foundations of business ethics, and the challenges of ethical decision making and leadership in an environment of globalization and change.

EMBA 521 Strategy Formulation and Execution
2 credits
This course explores concepts, tools and frameworks that the student can use to develop and implement effective business level strategies. The course examines what strategy is and considers in detail how an organization builds a sustainable competitive advantage. The course also examines the keys to successfully implementing strategy in an integrated fashion across the entire organization.
Prereq: EMBA 512 .

EMBA 522 Marketing Management and Innovation
2 credits
Explores the market orientation framework that needs to be created in order to promote innovation, including aspects of marketing and innovation capabilities, marketing strategy and processes, as well as specific marketing programs and decisions.

EMBA 524 Strategic Cost and Process Management
3credits
This course examines the concepts and tools needed for systematically designing, evaluating, and improving business processes to better achieve organizational objectives and for understanding and managing the costs associated with these processes and the products and services resulting from them.

EMBA 525 Managing Relationships to Influence Behavior
2 credits
Principles of developing and maintaining exchange relationships. Application of the principles to the practice of managing relationships between the organization and two key stakeholder groups: employees and customers.

EMBA 531 Crisis Communication
1 credit
Crises are a part of organizational life that require effective communication to internal and external stakeholders. This course addresses the elements of crisis communication planning and management as well as developing communication tactics for a range of audiences.
Prereq: EMBA 516 .

EMBA 533 Lean Startup & Product Launch
2credits
Provides insight into the key tools and steps needed to build a successful startup. The key idea in this course is learning how to rapidly develop and test ideas by gathering customer and marketplace feedback.
Prereq: EMBA 522 .

EMBA 534 Leading Strategic Change
1credit
This course prepares the student to lead strategic change within his or her organization by examining both the processes needed to bring about effective strategic change as well as the individual leadership abilities needed to lead these change efforts. The course also examines how to build adaptable and agile organizations that are predisposed to embrace (rather than resist) change. The course considers change primarily from the perspective of the organization's executive leadership team, but also explores how mid-level managers can lead strategic change initiatives within an organization.

EMBA 535 Decision Analytics
3 credits
Managers need to make timely and effective decisions, and data drives decisions. This course examines the behavioral and strategic aspects of decision making under uncertainty and risk, and under conditions of small and large data flows. Students will develop a multi-disciplinary toolkit that will help to manage the risk in decision making, improve an organization's effectiveness, and gain competitive advantage.

EMBA 542 Negotiation and Conflict Management
2 credits
This course examines the concepts and theories that underpin effective negotiation and conflict resolution. It emphasizes practical application of theory through selected readings and a series of simulations. The course will develop students' negotiation and conflict resolution skills so that they can more effectively negotiate positive outcomes for themselves and their organizations.
Prereq: EMBA 535 .

EMBA 543 Assessing to Improve Firm Performance
3 credits
Evaluation of organizational performance from multiple perspectives using quantitative and qualitative methods.

EMBA 544 Risk Management
3credits
Introduction to the tools, models, and strategic aspects of risk management.
Prereq: EMBA 514.

EMBA 545 Capstone Integrative Analysis
1-3 cedits, max 3
Students, working in consultation with a faculty mentor, design and complete a customized project that applies and integrates concepts from across multiple EMBA courses to achieve advanced learning in an area of particular interest or need of the student. Projects can be related to the student's organizational responsibilities, but do not have to be.
Prereq: EMBA 509, EMBA 512, EMBA 514, EMBA 516, EMBA 517, EMBA 521, EMBA 524, EMBA 525, and EMBA 522 .

EMBA 546 Managing for Your Future
1 credit
A personal perspective on the lessons learned in the EMBA program and a plan on utilizing those lessons in the student's professional career.

EMBA 599 (s) Non-thesis Master's Research
1-3 credits, max 6
Research not directly related to a thesis or dissertation.
Prereq: Permission .

FAMILY AND CONSUMER SCIENCES (FCS)

FCS 105 Individual and Family Development
3 credits
Basic principles and sequences in individual and family development; family structure and functions as they support human development. (Fall only)

FCS 119 Introduction to Fashion and the Apparel Industry
3 credits
Introduction to the sewn product manufacturing and merchandising industry; overview of socio-cultural, historic, aesthetic, design, business, and economic factors; emphasis on careers in the sewn products industry. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. (Fall only)

FCS 123 Textiles
3 credits
Fiber, yarn, and fabric properties, color and finishes as they relate to performance, care, and consumer satisfaction. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. (Fall only)

FCS 146 Adulting: Life, Love & Money
3 credits
This introductory course offers a practical approach to learning necessary life skills such as money management, navigating personal relationships, and planning for the unexpected things in life. Using an interdisciplinary approach, this course explores how emotions affect the use of money, and how that affects relationships throughout the lifespan. Students will learn smart decision making skills to help them succeed in college and post-college.

FCS 200 (s) Seminar
Credit arranged.

FCS 203 (s) Workshop
Credit arranged.

FCS 204 (s) Special Topics
Credit arranged.

FCS 205 Concepts in Human Nutrition
3 credits
Cross-listed with CORS 255.
Nutrition principles with their application to nutrition in life cycle; nutrition problems and controversies such as weight control and nutrition for athletes; individual computerized study of student's dietary intake.

FCS 210 Introduction to Early Childhood Education
2 credits
Provides an overview of the complexity of working with young children, including children with disabilities, and their families. The course includes introduction to history of early childhood education, supportive agencies, roles of professionals, contexts of typical and atypical child and family development, and curricular models. (Fall only)

FCS 219 Digital Illustration for the Apparel Industry
3 credits
Introduction to digital illustration software including apparel illustration tools, editing and coloring, working in the digital environment, and digital board building. Students follow an industry-typical concept and design process for a target customer, including corresponding design boards, line of garments, line presentation, and creation of an online portfolio site.
Prereq: FCS 119, FCS 123, and FCS 224.

FCS 224 Apparel Construction and Assembly Processes
3 credits
Design conception, fabric characteristics, garment construction and assembly, principles of fitting, quality control for the apparel industry. Two 3-hour studios a week and assigned work. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Clothing, Textiles and Design courses. (Spring only)
Prereq: Apparel, Textiles, and Design major; or Permission .

FCS 234 Infancy and Early Childhood
3 credits
Influences on development before birth through the preschool years; factors that determine physical, emotional, cognitive, social, and creative development. (Spring only)

FCS 235 Principles and Methods of Child Observation
3 credits
Development of skills necessary to observe, record, and interpret child behavior; observations to be arranged. (Fall only)
Prereq: FCS 234 with a grade of 'C' or better.

FCS 236 Directed Early Childhood Laboratory Experience
3 credits
Directed practical experience in early childhood settings to develop an understanding of early care and learning, and gain experience in developmentally appropriate practices and strategies to support the individual development and learning of young children.
Prereq: "C" or above in FCS 234 .

FCS 240 Intimate Relationships
3 credits
Dynamics of intimate relationships from early adulthood through the adult lifespan. (Spring only)

FCS 251 Survey of FCS Professions
1 credit
Web delivered, survey course for students considering a career in Family and Consumer Sciences, particularly teaching. Televised interviews with professionals in a variety of FCS careers, and an in-depth look at teaching as a career. An advising meeting with the FCS Teacher Educator is required to explain the requirements of the program.

FCS 270 Scientific Principles of Food Preparation
3 credits
Exploration of the scientific principles and techniques of food preparation; applied sensory evaluation of food. (Fall only)
Prereq: Major in the Department of Family and Consumer Sciences or Permission .

FCS 275 Experimental Foods
2 credits
Exploration of food preparation and application of underlying scientific principles through laboratory experiments. On-line modules focus on food safety, menu planning, food cost control, and cultural and religious influences on food choices. Hybrid course with one 3-hr lab and one web module a week. (Spring only)
Prereq: FCS 270 and a major in the Department of Family and Consumer Sciences; or Permission .

FCS 295 Career Development in Apparel & Textiles
1 credit, max 2
Preparation for professional internship and job search experiences, including identifying goals, skills, opportunities and strategies, fine-tuning resumes, the application processes, preparing for interviews, analyzing the internship, and introductory portfolio preparation. (Fall only)
Prereq: ATD major or permission .

FCS 299 (s) Directed Study
Credit arranged.

FCS 301 Professional Skills in Dietetics I
1 credit
Development of professional skills for CPD students including leadership skills, communication techniques, involvement in professional organizations, and promotion of foods and nutrition. Students will create a professional development portfolio. (Fall only)
Prereq: FCS 270 and Junior standing in the Food and Nutrition Coordinated Program in Dietetics Option.

FCS 302 Professional Skills in Dietetics II
1 credit
Development of professional skills for CPD students through career planning, portfolio development, involvement in professional organizations, participation in public policy development, promoting food and nutrition during National Nutrition Month and practice of communication techniques. (Spring only)
Prereq: FCS 301 and Junior standing in the Food and Nutrition Coordinated Program in Dietetics Option.

FCS 305 Nutrition Related to Fitness and Sport
2 credits
Identification of energy, macro/micro nutrient and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight maintenance, and wellness. (Fall only)
Prereq: FCS 205; and Family and Consumer Sciences major or Movement Sciences major or Permission .

FCS 323 Apparel Product Development
3 credits
Analysis of textile and apparel products and processes relative to design, development, and production methods, including evaluation of consumer value. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. Open to all students with sophomore standing or higher.

FCS 324 Patternmaking
4 credits
Methods and principles of flat pattern and draping design; use of pattern making skills and advanced construction skills in apparel product development; developing specifications for apparel production. Two 3-hour studios a week and assigned work. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses.
Prereq: FCS 224 with a grade of 'C' or better and Apparel, Textiles, and Design major; or Permission .

FCS 325 Computer-Aided Pattern Drafting
3 credits
This course builds on existing patternmaking skills by applying methods and techniques for developing patterns using computer-aided pattern drafting software and includes grading, markers, and graded spec sheets.
Prereq: FCS 324 .

FCS 329 History of Western Dress
3 credits
Historic overview of western dress from ancient Mesopotamia and Egypt to Western Europe through the 20th century; focus on dress and human appearance as a reflection of the socio-cultural factors of the times. (Spring only)
Prereq: Junior standing; and FCS 123 and ART 100; or Permission.

FCS 333 Developmental Curriculum for Young Children
4 credits
Principles and practices of a developmentally based curriculum, assessment, intervention, and evaluation. Three hrs of lec and two hrs of lab a wk. (Spring only)
Prereq: FCS 235 with a grade of 'C' or better or Permission.

FCS 334 Middle Childhood-Adolescence
3 credits
Behavior, development, and guidance of children and youth from entrance in school until they are launched into adulthood; influences of family, school, peer group, and larger community. (Fall only)
Prereq: FCS 105, PSYC 101, or SOC 101; or Permission.

FCS 340 Parent-Child Relationships in Family and Community
3 credits
May be taken by nonmajors. Dynamics of parent-child interactions and models for parent education programs in community and school settings. (Fall only)
Prereq: FCS 234 or FCS 334.

FCS 346 Personal and Family Finance and Management
4 credits
Principles and procedures of individual and family management and their relationship to human and economic resources; applications of management principles to spending, saving, borrowing, and investing decisions. (Spring only)

FCS 351 Administration of FCCLA Organizations
2 credits
This course will prepare FCS education students to become successful advisors of co-curricular FCCLA chapters. Attendance at the state FCCLA convention required. (Spring only)
Prereq: Admission to teacher education.

FCS 359 Apparel Technology
3 credits
Introduction to e-Textiles, laser cutting and 3D printing in an apparel or wearable context. Students will learn how to design within each technology and produce prototypes for evaluation.

FCS 360 Sexuality Across the Lifespan
3 credits
Sexuality lies at the core of our identities as human beings. This course explores critical perspectives on the development of sexuality across the lifespan, from childhood and adolescence to adulthood and later life, within the contexts of intimate relationships, family systems, and society. Participants are introduced to theory and research that prepare them to engage in sophisticated and thoughtful analyses of the complexity of identity and diverse sexualities, sexual behavior and feelings, cultural traditions and moral beliefs related to sex and identity, and academic approaches to the study of sex and sexual development.
Prereq: FCS 105 and FCS 240 .

FCS 361 Advanced Nutrition
3 credits
Principles of nutrition; physiology of digestion, absorption and metabolism of nutrients. (Fall only)
Prereq: FCS 205, BIOL 300, BIOL 120 and BIOL 121.

FCS 362 Introduction to Clinical Dietetics
3 credits
Nutritional assessment; review and application of the American Dietetic Association's Nutrition Care Process; introduction of nutrition therapies for disease. (Spring only)
Prereq: FCS 361 .

FCS 363 Medical Nutrition Therapy
4 credits
Diet modification for adult and child needs in disease and convalescence. Clinical experience in Spokane hospitals. (Fall only)
Prereq: Senior standing in CPD .

FCS 364 Clinical Dietetics I
4 credits
Clinical experience and simulations preparing students for entry into hospital rotations in Idaho/Washington hospitals.. (Fall only)
Prereq: Senior standing in CPD .

FCS 365 Advanced Nutrition Lab
1 credit
Lab to accompany FCS 361 for students accepted into CPD program only. One 2-hour lab per week. (Fall only)
Prereq: CPD major, FCS 205, BIOL 300, BIOL 120 and BIOL 121.

FCS 375 Recipe Development and Culinary Exploration

FCS 384 Quantity Food Production and Equipment
3 credits
Principles and practices of food production in large volume; foodservice systems; use and selection of institutional foodservice equipment. Three hours of lecture a week. (Fall only)
Prereq: FCS 275 or Permission.

FCS 385 Quantity Food Production and Equipment Lab
2 credits
Quantity food production lab and supervised practice experience including equipment training, recipe development and testing, theme meal production, and foodservice facility rotations. (Fall only)
Prereq: FCS 270 and FCS 275
Coreq: FCS 384.

FCS 387 Food Systems Management
3 credits
Institutional organization and management; supervised practice in food service. Three lec a wk. (Spring only)
Prereq: FCS 384 or Permission.

FCS 388 Intro Dietetics Supervised Practice II
1 credit
CPD supervised practice experience including introductory clinical, community, and food service management activities and facility rotations. One 3-hour lab per wk. (Spring only)
Prereq: FCS 384
Coreq: FCS 387.

FCS 389 Intro Clinical Nutrition Lab
1 credit
Application of clinical nutrition principles. Three hrs. of lab per week (Spring only)
Prereq: FCS 361; Foods and Nutrition Majors or permission
Coreq: FCS 362 .

FCS 400 (s) Seminar
Credit arranged.

FCS 401 Professional Ethics and Practice in CFCS
1 credit
Establishing a professional identity and transitioning to a career in human development and family services. Emphasis on professional presentation and ethical conduct. Explores ethical and philosophical issues; professional development and leadership; and career goals, opportunities, and challenges as they relate to human development and family sciences.
Prereq: Major in Child, Family, and Consumer Studies .

FCS 403 (s) Workshop
Credit arranged.

FCS 404 (s) Special Topics
Credit arranged.

FCS 405 (s) Professional Development
Credit arranged.

FCS 410 Growing Old in a New Age
3 credits
Overview of issues related to aging; life-span development, how environments affect older persons, seeking an optimal quality of life, cross-cultural considerations, how aging is studied, and how to access resources.

FCS 411 Global Nutrition
3 credits
Gen Ed: International
The history of food, hunger, and the global nature of food systems. Food & culture, environmental impact of food decisions, agricultural production, world populations relative to food supply, hunger, biotechnology, safety of our food supply, sustainability, effects of urbanization, and problems of under- and over-nutrition will be examined. (Spring only)

FCS 419 Dress and Culture
3 credits
Gen Ed: International
Dress and culture examined from an interdisciplinary and cross-cultural perspective with emphasis on diversity within a global scale society; the relationship of dress to physical environments, social and economic systems, aesthetic expression, individual identity, and cultural ideals and values. Field trip. (Spring only)
Prereq: Humanities and Social Science General Education completed, Junior standing, or Permission .

FCS 423 Sewn Product Industry Tour
1 credit, max 3
Field site tours of apparel industry firms representing design, manufacturing, merchandising, sourcing, retailing, and other aspects of the industry. Forty-five hours of instruction, field experience, and follow-up project work (3 hours prep, 32 hours tours/company visits, 10 hours project). Variable field trip fee depending on actual cost.
Prereq: Apparel, Textiles and Design major and junior standing; or Permission .

FCS 424 Senior Experience: Apparel Design
4 credits
Gen Ed: Senior Experience
Advanced patternmaking, draping, and construction skills, combined with aesthetic principles of design, prepare students to create apparel lines. A senior capstone to design and product development studies. Two 3-hour studios a week and assigned work.
Prereq: FCS 119, FCS 219, FCS 323, FCS 324, or Permission .

FCS 425 Historic Dress Collections Management
3 credits
Introduction to managing a historic collection of garments including accession and deaccession policies and procedures, conservation and storage practices, disaster management, and research for and mounting of exhibitions.
Prereq: FCS Major .

FCS 428 Housing America's Families
3 credits
Housing, furnishings, and equipment as they influence family well-being, and families' housing choices as affected by social, psychological, economic, technological, and political factors. Four-five 2-hr field trips. (Spring only)

FCS 431 Certified Family Life Educator Methodology
3 credits
This course surveys the models and methods for strengthening family relationships utilizing primary prevention strategies. Students will learn diverse techniques for teaching content related to the three cornerstones of family life education: interpersonal relationships, sexuality, and parenting.
Prereq: FCS 240, FCS 340, or FCS 440 .

FCS 432 Apparel Promotion and Merchandising
3 credits
Gen Ed: Senior Experience
Promotion in Merchandising is designed to cover the principles of fashion, consumer behavior as it relates to promotion activities, and non-personal selling techniques. The non-personal selling techniques to be covered include (but are not limited to) store image, advertising, display, publicity/public relations, fashion shows, and special events. Students will be involved in actual hands-on experience with many of the techniques.
Prereq: FCS 119, FCS 219, and FCS 323 .

FCS 434 Adulthood and Aging within the Context of Family
3 credits
Joint-listed with FCS 534
Analysis of development from young adulthood to old age. Includes factors that influence changes as well as continuity in physical, emotional, social, cognitive, and creative development. Overview of theories of human development and current issues in aging, including dementia, family and lifestyle choices, relationships, retirement, and grandparenting. Requirements for graduate credit include conducting a review of literature in a chosen topic and presenting it to the class. (Alt/yrs, spring only)
Prereq: FCS 105, Junior standing.

FCS 435 Feeding Young Children in Group Settings
1 credit
This course increases awareness concerning the best practices in feeding young children. Practical, hands-on activities and assignments are included in the course through videotapes and the course website, www.aee.uidaho.edu/feeding.

FCS 436 Theories of Child and Family Development
3 credits
Identification, interpretation, and evaluation of individual and family developmental theories. (Fall only)
Prereq: Family and Consumer Sciences major or Permission.

FCS 440 Contemporary Family Relationships
3 credits
Dynamics of the major types of family relationships; marital, parent-child, sibling, and extended-family interaction in contemporary society. (Spring only)
Prereq: PSYC 101, SOC 101, or Permission.

FCS 445 Issues in Work and Family Life
3 credits
Joint-listed with FCS 545
Study of theories, trends, policies, and issues related to work and family; examination of assessment instruments; development of proposals. Additional projects/assignments reqd for grad cr. (Spring only)
Prereq: FCS 105 and FCS 346; and Family and Consumer Sciences major.

FCS 446 Financial Counseling and Debt Management
3 credits
Course content includes an examination of financial counseling and debt management with individuals and families. Topics include principles of financial counseling, budgets, financial statements, credit, debt, collection policies and practices, mortgages, foreclosures, and bankruptcy. After completion, students are eligible to take a national exam towards becoming an Accredited Financial Counselor. Recommended Preparation: FCS 346. (Fall only)

FCS 448 Consumer Economic Issues
3 credits
Consumer economic issues, including consumers in the marketplace, the consumer movement, rights and remedies, advocacy, public policy, decision making, buying, credit, banking, insurance, clothing, health care, food, housing, and investments. (Fall only)
Prereq: ECON 201, ECON 202, ECON 272 or FCS 105; or Permission.

FCS 461 Methods & Strategies in FCS Education
3 credits
Changing family and societal conditions and enhancing teaching and learning processes are addressed in this course. A focus is integration of professional-technical concepts and the development of classroom presentation skills.

FCS 462 Eating Disorders
2 credits
Joint-listed with FCS 562
Examination of anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; discussion of cultural and nutritional factors, family issues, and psychological consequences, as well as preventative and therapeutic interventions. Additional projects/assignments required for graduate credit.
Prereq: Family and Consumer Sciences major or Permission .

FCS 463 Helping Skills in Dietetics
2 credits
Application and integration of the Skilled Helper and nutritional counseling models in dietetics. Development of communication skills essential for effective helping. This course requires role-playing. Students are assessed on the knowledge and skills they have acquired. (Fall only)
Prereq: FCS 362.

FCS 468 Real Estate Management
3 credits
This course is organized around the sequence of the real estate transaction for the new real estate professional. Other aspects of real estate will include diversified properties that require management and the duties and obligation of the property manager.
Prereq: FCS 346 .

FCS 472 Clinical Dietetics II
8 credits
Continuation of FCS 364. Supervised practice in Washington/Idaho hospitals. (Spring only)
Prereq: FCS 364, Senior standing in CPD.

FCS 473 Community Nutrition
3 credits
Identification of current public health nutrition problems; influence of socioeconomic, cultural and psychological factors on food and nutrition behavior; available community programs; program development and marketing; and the implications of public policy legislation; teaching/counseling methods for the nutrition education of small groups and individual clients/patients. (Fall only)
Prereq: FCS 270 .

FCS 475 Food Preservation
1 credit
Online course explores foodborne illness, food safety and food science behind high quality, shelf-stable home preserved foods; topics include water bath canning, pressure canning, pickling, freezing and drying. Real-time chat Thursdays at 1:00 PDT.

FCS 476 Textile Structures
1-3 credits, max 3
This studio course gives students the opportunity to experiment with fiber-based fabrications. These may include woven, knitted, felted, laced, and knotted fabrications dependent on current industry trends. May include embellishment and surface design depending on the fabrication and industry trends. Service learning completes the final project.
Prereq: FCS 123 or Permission .

FCS 477 Surface Design
1-3 credits, max 3
This studio course gives students the opportunity to experiment with the texture and appearance of textile fabrications. Techniques may include dyeing and resist methods, subtraction, and embellishment, among others depending on industry trends.
Prereq: FCS 123 or Permission .

FCS 478 Experimental Construction
1-3 credits, max 3
This studio course gives students the opportunity to experiment with transforming two-dimensional textiles into three-dimensional apparel products. Techniques may include tailoring, upcycling, use of non-traditional textiles, and use of fabrics students have produced in other courses, among others dependent on current industry trends.
Prereq: FCS 224 or Permission .

FCS 480 Assessment: Early Childhood/SPED
3 credits
The assessment process, link between assessment, curriculum planning, and IEP/IFSP development, cultural responsiveness in assessment, legal issues and family partnerships. Practical experience using strategies and tools for screening and assessing development of infants and children birth through age 8, including typical and atypical development. Recommended Preparation: FCS 234 and FCS 333
Prereq: "C" or better in FCS 234, FCS 235, & EDSP 300 .

FCS 481 Early Childhood SPED Curriculum
3 credits
Overview of typical and atypical infant and child development; instructional strategies for working with infants, toddlers and young children through third grade, linking assessment, curriculum and IEP and IFSP development, designing instructional programming for natural settings and formal settings; involving families, collaboration among professionals, working with volunteers and paraprofessionals. Recommended Preparation: FCS 234 and FCS 333.
Prereq:"C" or better in FCS 234, EDSP 300, & EDCI 302 .

FCS 484 Vegetarian Food and Nutrition
3 credits
Vegetarian food and nutrition principles with their application to health benefits and life cycles stages. (online only)
Prereq: FCS 205.

FCS 486 Nutrition in the Life Cycle
3 credits
Gen Ed: Senior Experience
Maternal nutrition and fetal development; lactation; nutritional needs and dietary patterns from conception to end of life. (Fall only)
Prereq: FCS 205; and Food and Nutrition major; or Permission .

FCS 487 Community Nutrition Supervised Practice
4 credits
Community nutrition supervised practice experience in WIC, Child Nutrition, wellness facilities, public health, etc.
Prereq: FCS 486 and Senior standing in CPD
Coreq: FCS 473 and FCS 486 .

FCS 488 Management Supervised Practice II
8 credits
Supervised practice with dietitians and employees in school and hospital food service settings in Idaho or Washington.
Prereq: FCS 387 and Senior Standing in CPD .

FCS 490 Infant & Toddler SPED Internship
1-7 credits
Direct practical experience in settings serving typically and atypically developing infants: ages birth to 35months. Demonstration of screening, assessment, development of IFSP, programming in natural environments, working closely with parents to increase their roles as partners and collaboration among service providers.
Prereq: FCS 480 and FCS 481 .

FCS 491 Research Methods in Food Nutrition
3 credits
Research methodology currently used in food and nutrition; critical review of the literature; use of electronic surveys; research proposal and presentations. (Spring only)
Prereq: FCS 205 and STAT 251 .

FCS 492 Nutrition Education in the Life Cycle
3 credits
Gen Ed: Senior Experience
Principles and theories of learning, curriculum development, evaluation methods, and applied food and nutrition education throughout the life cycle. Practice in delivering nutrition education through food demonstrations. (Spring only)
Prereq: FCS 205 and FCS 275 and FCS 486 .

FCS 493 Design and Development for a Client
3 credits
Student teams develop a line of apparel for a client from concept to finished prototype; design, patternmaking, construction, tech pack building and presentation skills are all used throughout the course.
Prereq: FCS 323 and FCS 324 .

FCS 494 Portfolio Development
3 credits
Preparation of a professional portfolio, in both digital and hard copy formats, for design, merchandising, and other FCS career development applications.
Prereq: FCS 219 and FCS 324; or Permission .

FCS 496 Internship:Fashion Business
2-8 credits, max 8
Supervised experience in fashion business: fashion design, textile/apparel manufacturing, retailing, merchandising; geared to career goals of student. Graded P/F.
Prereq: Apparel, Textiles and Design major.

FCS 497 Internship Preschool
Credit arranged
Gen Ed: Senior Experience
Supervised applied experience in child development and family relations. The field experience offers opportunity for students to learn about working in settings for children and families.
Prereq: FCS 234 with a grade of 'C' or better, FCS 235 with a grade of 'C' or better, FCS 333 with a grade of 'C' or better, and permission.

FCS 498 (s) Internship
3-9 credits, max 9
Supervised internship in education institutions, governmental/social agencies, hospitals, business, or industry; geared to the professional goals of students.
Prereq: Permission.

FCS 499 (s) Directed Study
Credit arranged.

FCS 500 Master's Research and Thesis
Credit arranged.

FCS 501 (s) Seminar
Credit arranged.

FCS 502 (s) Directed Study
Credit arranged.

FCS 503 (s) Workshop
Credit arranged.

FCS 504 (s) Special Topics
Credit arranged.

FCS 505 (s) Professional Development
Credit arranged.

FCS 508 Helping Skills in Family and Consumer Sciences
3 credits
Using the Skilled Helper Model, students apply the model in working with families and clientele in FCS occupations. (Spring only)

FCS 540 Parent-Child Relationships
3 credits
Open to nonmajors. The developing family; patterns of child rearing.
Prereq: FCS 234 or FCS 334, FCS 440, and 6 credits in Psychology and/or Sociology or Equivalent.

FCS 545 Issues in Work and Family Life
3 credits
Joint-listed with FCS 445
Study of theories, trends, policies, and issues related to work and family; examination of assessment instruments; development of proposals. Additional projects/assignments reqd for grad cr. (Spring only)

FCS 590 Intellectual Foundations in Family and Consumer Sciences
3 credits
Overview of historical perspectives of family and consumer sciences profession; explanation and application of alternative modes of inquiry in family and consumer sciences research.

FCS 598 (s) Internship
Credit arranged
Supervised internship in educational institutions, governmental/social agencies, hospitals, or industry; geared to the educational and vocational goals of students.
Prereq: Permission.

FCS 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

FINANCE (FIN)

FIN 204 (s) Special Topics
Credit arranged.

FIN 260 Student Investment Fund Mgmnt
1 credit, max arranged
Open only to freshman and sophomore students participating in the A.D. and J.E. Davis Student Investment Program. "Hands on" experience in investment management; students manage a funded portfolio in terms of establishing objectives, security selection, asset allocation, and portfolio performance. Graded P/F.
Prereq: Permission.

FIN 298 (s) Internship
1-3 credits, max 6.

FIN 299 (s) Directed Study
Credit arranged.

FIN 301 Financial Resources Management
3 credits
This course examines the policies and practices involved in the allocation of financial resources in business organizations; develops the tools needed to use financial data for analysis and financial decision making. May involve evening exams.
Prereq: ACCT 201; ECON 202 or ECON 272 .

FIN 302 Intermediate Financial Management
3 credits
An intermediate-level course in managerial finance that addresses more complex issues such as risk in capital budgeting, working capital management, mergers, business failure and reorganization, and lease financing. May involve evening exams.
Prereq: FIN 301; ACCT 202; BUS 252; ECON 201 or ECON 272; MATH 160 or MATH 170.

FIN 381 International Finance
3 credits
Study of financial problems facing business engaged in international activities; foreign exchange risk management, international diversification, multinational capital budgeting, country risk analysis, financing foreign investments, international financial markets.
Prereq: ECON 201 or ECON 272; and instructor permission.

FIN 398 (s) Internship
1-3 credits, max 6 .

FIN 404 (s) Special Topics
Credit arranged.

FIN 407 Financial Institutions
3 credits
Examines management and regulation of financial institutions, including structure of global financial markets and the measurement and management of risk for these institutions.
Prereq: FIN 302 .

FIN 408 Security Analysis
3 credits
Emphasis on theory and practice of security analysis and other techniques of financial analyses; may involve management of actual portfolios. (Fall only)
Prereq: FIN 302.

FIN 409 Problems Financial Mgmnt
3 credits
Analysis of selected topics in financial management; asset allocation; capital budgeting and valuation; synthesis of financial management skills through case analysis; written and oral reports and computer simulations. May involve evening exams. (Spring only)
Prereq: FIN 302.

FIN 460 Advanced Student Investment Fund Management
1 credit, max arranged
Open only to students participating in the A.D. and J.E. Davis Student Investment Program. "Hands on" experience in investment management; students manage a funded portfolio in terms of establishing objectives, security selection, asset allocation, and portfolio performance. May meet concurrently with FIN 260. Graded P/F.
Prereq: Permission.

FIN 463 Portfolio Management
3 credits
Application of security selection, portfolio theory and construction; financial futures; risk and return in investments; may involve management of actual portfolios. (Spring only)
Coreq: FIN 302.

FIN 464 Derivatives and Risk Management
3 credits
This course will cover methods used to establish the fair price of derivative securities and the creation of synthetic securities, demonstrate the practical uses of derivatives in speculation, hedging and arbitrage, and examine the process of measurement and management of financial risk. (Spring only)
Prereq: FIN 302 .

FIN 465 Introduction to Market Trading
3 credits
Provides students practical experiences in the analysis of financial conditions and markets with the objective of developing trading and risk management strategies. Professional trading analysis software is used. The major topics covered include financial instruments, fundamental and technical analysis of markets, inter-market analysis, and risk management. (Fall only)
Coreq: FIN 302 or Permission .

FIN 466 Market Trading Strategies
3 credits
Provides students practical experiences in the analysis of financial conditions and markets with the objective of developing trading and risk management strategies. Professional trading analysis software is used. Students in this class will develop strategies that can be submitted for funding by the Barker Trading Program. (Spring only)
Prereq: FIN 465 and Permission .

FIN 467 Barker Capital Management Group
1 credit, max 6
Graded P/F. The course is a 1-credit hour extra-curricular course taken on a Pass-Fail basis. Students in this course will function as a member of the Barker Capital Management Group (BCMG) and will work individually and in teams to manage a portion of the Barker Endowment Fund. The class will identify and research investment opportunities for the fund, develop and implement risk management strategies for the portfolio, monitor the results and make adjustments to the portfolio as required.
Prereq: Permission.

FIN 468 Market Trading Lab
1 credit, max 6)
Graded Pass/Fail. This course is a lab to complement FIN 465 Introduction to Market Trading and FIN 466 Market Trading Strategies. Students who take this course will either trade a portfolio funded by the Barker Capital Markets and Trading Program endowment, or be actively working towards qualifying for a funded portfolio. Students will receive mentoring from the instructor and other faculty participating in the Barker Program. The students will also interact with other funded traders and, on occasion, provide mentoring to students in earlier stages of the program. Recommended Preparation: STAT 251 or equivalent, ECON 201 and ECON 202, or ECON 272 or equivalent.
Prereq: FIN 465, FIN 466 and Permission.

FIN 469 Risk and Insurance
3 credits
Examines risk and insurance, covering risk identification and measurement, risk reduction and hedging, and insurance pricing. (Fall only)
Prereq: FIN 302 .

FIN 483 Topics in Financial Analysis
3 credits
This course examines various topics relevant to the CFA Institute's Common Body of Knowledge. Topics will vary based on current issues in the financial analysis industry.
Prereq: FIN 302.

FIN 499 (s) Directed Study
Credit arranged.

FISHERY RESOURCES (FISH)

FISH 102 The Fish and Wildlife Professions
1 credit
Cross-listed with WLF 102.
Orientation of students to the profession of fishery resources and wildlife resources: introduction to fish and wildlife faculty, review of fish and wildlife curriculum, awareness of career opportunities, employment procedures, associated job duties/responsibilities, job preparation, educational preparation, and management challenges in the Pacific Northwest. (Fall only)

FISH 200 (s) Seminar
Credit arranged.

FISH 202 Fish & Wildlife Applications II
1 credit
This two semester sequence (WLF 201, FISH 202) of courses will introduce students to research questions and methods in fish and wildlife sciences, the culture and organization of potential state, federal and tribal employers and management challenges for fish and wildlife. The course will include an experiential learning field trip.
Prereq: NR 101 or Permission.

FISH 203 (s) Workshop
Credit arranged.

FISH 204 (s) Special Topics
Credit arranged.

FISH 299 (s) Directed Study
Credit arranged.

FISH 314 Fish Ecology
3 credits
Examination of physical, chemical, and biological factors that affect fish populations and communities, with emphasis on environmental stressors. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: FOR 221, REM 221, or BIOL 314 .

FISH 315 Fish Ecology Field Techniques and Methods
2 credits
Laboratory and field experience in fish ecology with emphasis on field techniques, laboratory experimentation, and habitat assessment. One weekend field trip and several day trips required. (Fall only)
Prereq: FOR 221, REM 221, NR 321, or BIOL 314 .

FISH 398 (s) Renewable Natural Resources Internship
Credit arranged
Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F.
Prereq: Permission of department .

FISH 400 (s) Seminar
Credit arranged.

FISH 403 (s) Workshop
Credit arranged.

FISH 404 (s) Special Topics
Credit arranged.

FISH 411 Fish Physiology
2 credits
Joint-listed with FISH 511
Physiology of fishes, their implications, and applications. Principles and methods used to study organ systems and physiological mechanisms of homeostatic regulation in fishes.
Prereq: FISH 481.

FISH 415 Limnology
4 credits
Physical, chemical, and biological features of lakes and streams. Four 1-day field trips. (Fall only)
Prereq: STAT 251 and FOR 221, REM 221, or BIOL 314.

FISH 418 Fisheries Management
4 credits
Gen Ed: Senior Experience
Techniques employed in sampling and application of principles toward managing recreational and commercial aquatic resources. Three lec and one 3-hr lab a wk; two weekend field trips. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: FISH 314 and FISH 481 and STAT 251.

FISH 422 Concepts in Aquaculture
4 credits
Concepts and methods of extensive and intensive aquaculture in warm water and cold water systems. Two field trips reqd (a 1-day and a 3-day field trip). Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq or **Coreq:** FISH 481.

FISH 424 Fish Health Management
4 credits
Epidemiology, prevention, diagnostics, and treatment of infections and non-infectious diseases of free-living and confined finfish and shellfish. Two field trips reqd (a 1-day and a 3-day field trip). Recommended Preparation: FISH 422. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: BIOL 250.

FISH 430 Riparian Ecology and Management
3 credits
Structure, function, and management of riparian ecosystems; interrelationships of terrestrial and aquatic components of riparian areas. 3 field trips. Special fee required. (Spring only)
Prereq: FOR 221, REM 221, or BIOL 314.

FISH 450 Ecology & Conservation of Freshwater Invertebrates
2 credits
Joint-listed with FISH 550.
The course will survey the evolutionary origins and identification of major groups of invertebrates occurring in freshwaters, examine the key behavioral, morphological, and physiological traits possessed by freshwater invertebrates, identify the key ecological roles and influence of invertebrates in freshwater ecosystems and ecosystem services, and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosytem condition. Cooperative: open to WSU degree-seeking students. (Spring Alt/yrs)
Prereq: BIOL 114 or ENT 322 or Permission.

FISH 451 Freshwater Invertebrate Field Methods
2 credits
Joint-listed with FISH 551.
The course will survey the systematics and identification of freshwater invertebrates and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosystem condition. Students will collect and identify freshwater invertebrates from habitats surrounding Moscow, Idaho during an intensive field course. The course will occur on one weekend in February and five days of Spring Break. the course has two required field trips. Cooperative: open to WSU degree-seeking students. (Spring Alt/yrs)
Prereq: BIOL 114 or ENT 322 or Permission
Coreq: FISH 450.

FISH 473 ECB Senior Presentation
1 credit
Gen Ed: Senior Experience
Cross-listed with FOR 473, NRS 473, REM 473, RMAT 473, and WLF 473
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with FISH 485 or FISH 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).
Prereq: Instructor Permission.

FISH 481 Ichthyology
4 credits
Anatomy, systematics, physiology, behavior, genetics and zoogeography of fishes. Three lectures and one 3-hr lab per week. Course has two required field trips. (Spring only).
Prereq: BIOL 114 and BIOL 115, and BIOL 213 or instructor permission .

FISH 483 Senior Project Presentation
1 credit
Cross-listed with FOR 483, NRS 483, REM 483, and WLF 483
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with FISH 485 or FISH 497.

FISH 495 (s) Fisheries Seminar
1 credit
Gen Ed: Senior Experience
Discuss integrating biological, social, political, economic, and philosophic aspects of problems in managing fishery resources. (Spring only)
Prereq: Senior standing.

FISH 496 Intro to Aquatic Restoration
1 credit
Fundamental theoretical and practical concepts in aquatic restoration spanning from in-water to the top of the watershed. Major topics include water quality, sources of pollution, restoration techniques (in-water and terrestrial) to restore aquatic ecosystems, and the role of using an adaptive systems approach. Lecture material are delivered online, while a 1-2 day face-to-face hands-on practicum will be based out of UI's Lakes Social Ecological Systems (LaSES) lab at the Harbor Center in Coeur D'Alene or UI's McCall Outdoor Science School (MOSS) in McCall.
Prereq: FOR 221/REM 221/WLF 220 .

FISH 497 Senior Thesis
1-3 credits, max 6
Preparation of thesis, exhibition, video, computer program, multimedia program, or other creative presentation based on research conducted under the guidance of a faculty mentor.
Prereq: Cumulative GPA of at least 3.2 in all college courses, completion of at least 90 credits, and permission of a faculty mentor.

FISH 498 (s) Internship
Credit arranged
The internship serves to provide hands on experience for students interested in fisheries and aquaculture.
Prereq: Instructor permission .

FISH 499 (s) Directed Study
Credit arranged
For the individual student; conferences, library, field, or lab work.
Prereq: Senior standing, GPA 2.5, and Permission.

FISH 500 Master's Research and Thesis
Credit arranged.

FISH 501 (s) Seminar
Credit arranged
Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Graded P (pass)/F (fail).
Prereq: Permission.

FISH 502 (s) Directed Study
Credit arranged.

FISH 503 (s) Workshop
Credig arranged
Selected topics in the conservation and management of natural resources.
Prereq: Permission.

FISH 504 (s) Special Topics
Credit arranged.

FISH 510 Advanced Fishery Management
3 credits
Contemporary management of marine and freshwater fish and shellfish populations of the world. Approaches, factors, and models used to manage commercial, recreational and subsistence fisheries; and the policy interface of biological systems with governmental and social institutions. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yrs)

FISH 511 Fish Physiology
2 credits
Joint-listed with FISH 411
Physiology of fishes, their implications, and applications. Principles and methods used to study organ systems and physiological mechanisms of homeostatic regulation in fishes. Cooperative: Open to WSU degree-seeking students. (Spring, Alt/yrs)
Prereq: Permission.

FISH 515 Large River Fisheries
2 credits
Management issues and problems in large river fisheries in North America and globally; importance of flood plains; ecological bases for management actions in large rivers; river fisheries in the context of multiple use of large rivers. Cooperative: open to WSU degree-seeking students. (Fall, Alt/yrs)

FISH 516 Animal Movement, Dispersal and Migration
3 credits
Key theories and approaches for studying animal movement and dispersal in aquatic, marine and terrestrial environments, with critical analysis of empirical examples. Students are expected to develop an independent research project. The course includes a 3-day field trip touring important bird and fish migration locations in the Columbia Basin. Cooperative: open to WSU degree-seeking students.

FISH 521 Community Ecology
3 credits
Introduction to literature and contemporary research into processes structuring ecological communities. Topics will encompass community ecology in a range of ecological systems and across trophic levels, including community impacts on ecosystem processes. (Fall/Alt/yrs)
Prereq: FOR 221 or REM 221 .

FISH 525 Aquaculture in Relation to Wild Fish Populations
2 credits
Historical and current relationships between wildness and domestication as it relates to fisheries management and aquaculture in mitigation and industry. Interactions between wild and hatchery-reared fishes, including salmon. Cooperative: open to WSU degree-seeking students. (Fall, alt/yrs)

FISH 526 Climate Effects & Cons Manage
2 credits
Climate change and the conservation and management of populations and ecosystems. This graduate seminar will examine the current understanding of climate controls on ecosystems, likely scenarios for climate change in coming years, effects on fish and wildlife communities and populations and policy discussions as they relate to conservation and management using analysis of primary literature, and oral and written assignments. Cooperative: open to WSU degree-seeking students. (Fall Alt/yrs)
Prereq: Previous coursework in ecology or Permission.

FISH 530 Stream Ecology
3 credits
Structure and function of running water ecosystems; principles of population, community, and ecosystem ecology in streams and rivers. Three 1-day field trips reqd. (Fall, Alt/years)

FISH 540 Wetland Restoration
3 credits
This web-based course contains modules covering wetland science, restoration ecology, freshwater restoration, coastal restoration, and monitoring/maintenance. The emphasis is on the science of wetland ecosystems and the applied ecology/practice of restoration, with additional consideration of cultural and socio-political contexts. Extensive readings, an assignment, and a study guide are required for each module. Students apply their learning in and contribute relevant professional experience to weekly online discussions. Students are also responsible for obtaining documentation of at least one wetland restoration site in their region and conducting a site visit in order to evaluate the success of the restoration project. A final exam (re-design of a failed restoration project) is administered online, with partial credit earned through discussion with an interdisciplinary team of classmates and the remaining credit earned through individual analysis and synthesis. (Fall only)
Prereq: BIOL 114 and BIOL 115; and FOR 221 or BIOL 314 or Permission.

FISH 550 Ecology & Conservation of Freshwater Invertebrates
2 credits
Joint-listed with FISH 450.
The course will survey the evolutionary origins and identification of major groups of invertebrates occurring in freshwaters, examine the key behavioral, morphological, and physiological traits possessed by freshwater invertebrates, identify the key ecological roles and influence of invertebrates in freshwater ecosystems and ecosystem services, and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosytem condition. Cooperative: open to WSU degree-seeking students. (Spring Alt/yrs)

FISH 551 Freshwater Invertebrate Field Methods
2 credits
Joint-listed with FISH 451.
The course will survey the systematics and identification of freshwater invertebrates and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosystem condition. Students will collect and identify freshwater invertebrates from habitats surrounding Moscow, Idaho during an intensive field course. The course will occur on one weekend in February and five days of Spring Break. the course has two required field trips. Cooperative: open to WSU degree-seeking students. (Spring Alt/yrs)
Prereq: BIOL 114 or ENT 322 or Permission
Coreq: FISH 450.

FISH 598 (s) Internship
Credit arranged.

FISH 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

FISH 600 Doctoral Research and Dissertation
Credit arranged.

FOOD SCIENCE (FS)

FS 110 Introduction to Food Science
3 credits
Chemistry, microbiology, and processing of food and food products; concepts of food preservation, packaging and marketing of foods; food additives and regulations; world food problems. Field trip may be required. Cooperative: open to WSU degree-seeking students.

FS 113 Introduction to Vines and Wines
3 credits
The importance of viticulture (grape growing) including world wine regions and enology (winemaking). Cooperative: open to WSU degree-seeking students.

FS 201 Science on Your Plate
3 credits
Cross-listed with CORS 232.
Applications of science, scientific literacy, and critical thinking as related to the development and manufacture of modern food products and their use in modern civilizations. Cooperative: open to WSU degree-seeking students.

FS 204 (s) Special Topics
Credit arranged
Cooperative: open to WSU degree-seeking students.

FS 220 Food Safety and Quality
3 credits
Regulation, safety, and wholesomeness of food products; microbiological, chemical, and physical risks associated with food; hazard analysis as related to food safety, processing and quality; sanitation and pest management principles; methods for analyzing the sensory qualities of food products; problem management associated with food quality assurance. Cooperative: open to WSU degree-seeking students.

FS 299 (s) Directed Study
Credit arranged.

FS 301 Food Mycology
3 credits
Survey of the fungi important in food production, storage, and spoilage. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 250 or BIOL 255 .

FS 302 Food Processing Lab
1 credit
Application of specialized techniques, concepts and practices of food processing. Field Trip required. Cooperative: open to WSU degree-seeking students.
Coreq: FS 303 .

FS 303 Food Processing
3 credits
Specialized techniques, concepts and practices of food processing. Cooperative: open to WSU degree-seeking students.
Prereq: AVS 172 or FS 110; and FS 220; and MATH 160 or MATH 170; and STAT 251
Coreq: FS 302.

FS 304 Cereal Chemistry and Processing
3 credits
This course has been designed to provide students with a breadth of knowledge in the field of cereal grain science. This course will cover cereal and legume structure, chemistry, and function as it relates to processing and utilization. Cooperative: open to WSU degree-seeking students.
Prereq: CHEM 275 or CHEM 277.

FS 329 Dairy Foods Composition and Quality
4 credits
Introduction to the dairy processing industry. Chemistry of milk components. Standards of identity of dairy products. Quality control tests of fluid milk. Microbiology of fluid milk. Organoleptic properties of fluid milk and changes during storage. Federal, state and international regulations applied to dairy foods. Cleaning and sanitation in dairy manufacturing plants. Dairy effluents and waste management. Three lec and one 2-hr lab a week; two 1-day field trips required. Cooperative: open to WSU degree-seeking students.
Prereq: AVS 172 or FS 110; and Chem 275 and Chem 276 .

FS 363 Animal Products for Human Consumption
4 credits
Cross-listed with AVS 363
The meat, dairy, and egg industries, including product produced, processed, safety (HACCP), nutrition, distribution, quality, quantity, palatability, health, cooking, home storage, and consumer concerns. Special clothing and equipment required. Three lecture credits and one 3-hour lab per week. Recommended Preparation: BIOL 115. Cooperative: open to WSU degree-seeking students.

FS 398 (s) Internship
Credit arranged
Supervised professional internship in the food industry; requires formal written plan of activities approved by academic advisor and department head. Final written report and presentation required. Cooperative: open to WSU degree-seeking students.
Prereq: Permission of department.

FS 400 (s) Seminar
Credit arranged.

FS 401 Industrial Fermentations
3 credits
Science and technology associated with industrial-scale food fermentations. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 250 and BIOL 300 .

FS 402 Ciders and Other Fermented Foods
3 credits
Chemistry, microbiology, and technology associated with the production of cider, beer, and other food fermentations. Two half-day field trips required. Cooperative: open to WSU degree-seeking students.
Prereq: FS 304; FS 465 .

FS 403 (s) Workshop
Credit arranged
Workshops focusing on Food Science. Cooperative: open to WSU degree-seeking students.

FS 404 (s) Special Topics
Credit arranged
Special topics related to Food Science. Cooperative: open to WSU degree-seeking students.

FS 405 (s) Professional Development
Credit arranged.

FS 406 Evaluation of Dairy Products
2 credits
Identifying attributes of different dairy products caused by production, processing, and storage issues; determining probable cause of those attributes and how to reduce their occurrence. Recommended Preparation: FS 329, FS 429, and FS 433. Cooperative: open to WSU degree-seeking students. (Spring only)

FS 407 Evaluation of Dairy Products Lab
1 credit Identifying defects in dairy products and intense training for Collegiate Dairy Products Evaluation Competition. Cooperative course available to WSU degree-seeking students.
Prereq: FS 406 .

FS 409 Principles of Environmental Toxicology
3 credits
Cross-listed with EnvS 409. Joint-listed with FS 509
Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Students registering for FS 509 are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251. Cooperative: open to WSU degree-seeking students.

FS 416 Food Microbiology
3 credits
Purpose for enumeration, detection, and identification of microorganisms in food products; physical, chemical, and environmental factors influencing growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms in food and their control. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 250 and BIOL 255 .

FS 417 Food Microbiology Laboratory
2 credits
Methods for enumeration, detection, and identification of spoilage and pathogenic microorganisms in foods. Two 3-hr labs a wk. Cooperative: open to WSU degree-seeking students.
Prereq or **Coreq:** FS 416.

FS 418 Oral Seminar in Food Science
1 credit
Development of skills and communication tools and techniques for oral presentations of current food science research. Cooperative: open to WSU degree-seeking students.
Prereq: FS 110 or FS 220; and junior standing; and major in Food Science.

FS 422 Sensory Evaluation of Food and Wine
3credits
Joint-listed with FS 522.
Theory, principles and application of sensory evaluation techniques to evaluate appearance, aroma, flavor and texture of foods and wine. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: FS 110 or FS 113; and STAT 251.

FS 423 Sensory Evaluation of Food and Wine Laboratory
1 credit
This course will provide a practical application of FS 422, including the theory, principles and applications of sensory evaluation techniques for the evaluation of appearance, aroma, flavor and texture of foods and wine. Recommended for ages 21 or older. Cooperative: open to WSU degree-seeking students.
Coreq: FS 422 .

FS 429 Dairy Products
3 credits
Joint-listed with FS 529.
Dairy chemistry, microbiology, sanitation, product development and processing from cow to consumer. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 250, BIOL 300, and FS 303.

FS 430 Dairy Products Lab
1 credit
Joint-listed with FS 530.
Students gain hands-on skills formulating, processing, evaluating and analyzing dairy products. Communication and critical thinking skills are also developed in this laboratory course. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

FS 432 Food Engineering
3 credits
Fundamentals of food engineering for improving the efficiency of food processing operations and the quality of processed food. Principles of heat transfer, steam, air-vapor mixtures, refrigeration and fluid flow as applied to food processing and storage. Recommended preparation: PHYS 111. Cooperative: open to WSU degree-seeking students.
Prereq: FS 302 and FS 303
Coreq:FS 433.

FS 433 Food Engineering Lab
1 credit
Enhances the learning experience of the students taking FS 432 through laboratories, problem sessions and group discussions. Cooperative: open to WSU degree-seeking students.
Prereq or **Coreq:** FS 432 .

FS 436 Principles of Sustainability
3 credits
Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: Junior or higher standing .

FS 460 Food Chemistry
3 credits
Fundamentals of food chemistry; composition of foods and the changes that occur during processing. Cooperative: open to WSU degree-seeking students.
Prereq: CHEM 275 and CHEM 276; or CHEM 277 and CHEM 278, and BIOL 300 or BIOL 380 .

FS 461 Food Chemistry Lab
1 credit
Experiments related to properties, reactions, and interactions of chemical components of foods. Cooperative: open to WSU degree-seeking students.
Coreq: FS 460 .

FS 462 Food Analysis
3 credits
Introductory food analysis; methods common to many food commodities. Recommended Preparation: FS 460 and FS 461. This is a cooperative course available to WSU degree-seeking students.
Prereq: FS 302 and FS 303; and CHEM 275/CHEM 276 or CHEM 277/CHEM 278; and Senior Standing .

FS 464 Food Toxicology
3credits
Joint-listed with FS 564.
General principles of toxicologic evaluation of chemicals, which intentionally or unintentionally enter the food chain. Toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 300 or BIOL 380.

FS 465 Wine Microbiology and Processing
3 credits
Joint-listed with FS 565.
Technical principles related to the processing and fermentation of wines with an emphasis on microbiology. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 250 and BIOL 300.

FS 466 Wine Microbiology and Processing Lab
1 credit
Hands-on winemaking; application of chemical microbiological methods for wine analysis. Field trip required. Cooperative: open to WSU degree-seeking students.
Prereq or **Coreq:** FS 465 .

FS 470 Advanced Food Technology
3 credits
Joint-listed with FS 570.
Physical principles of food preservation and recent advances in food technology including process control and control systems. Recommended Preparation: FS 432 and FS 460. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: FS 302 or FS 303 .

FS 475 Quality Management Tools for Food Products
3 credits
Describe fundamental concepts for quality management and improvement of biomanufactured goods. Apply principles of statistical process control in a variety of situations and systems. Cooperative: open to WSU degree-seeking students.
Coreq: FS 302 and FS 303; STAT 251 or permission from instructor.

FS 489 Food Product Development
3 credits
Gen Ed: Senior Experience
Course serves as a capstone experience for food science seniors, and will require the application of food chemistry, food processing/engineering, and microbiology course knowledge in formulating a new food product. Cooperative: open to WSU degree-seeking students.
Prereq: FS 302, FS 303, FS 416, and FS 460; and senior standing.

FS 498 (s) Internship
Credit arranged
Supervised professional internship in the food industry; requires formal written plan of activities approved by academic advisor and department head. Final written report and presentation required. Cooperative: open to WSU degree-seeking students.
Prereq: Permission of department.

FS 499 (s) Directed Study
Credit arranged
Cooperative: open to WSU degree-seeking students.

FS 500 Master's Res & Thesis
Credit arranged.

FS 501 (s) Seminar
Credit arranged.

FS 502 (s) Directed Study
Credit arranged.

FS 503 (s) Workshop
Credit arranged
Workshops focusing on Food Science. Cooperative: open to WSU degree-seeking students.

FS 504 (s) Special Topics
Credit arranged
Topics in Food Science. Cooperative: open to WSU degree-seeking students.

FS 509 Principles of Environmental Toxicology
3 credits
Cross-listed with ENVS 509. Joint-listed with FS 409.
Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Students registering for FS 509 are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251.

FS 510 Functional Foods and Health
3 credits
Functional foods are foods that provide health benefits beyond basic nutrition. This course will deal with the actions of bioactive compounds in functional foods and nutraceuticals as they relate to disease prevention and health promotion. In addition, this course will cover (1) the chemistry and mechanism of action of the various bioactive compounds, and (2) the safety, efficacy, stability and regulatory aspects of functional foods and nutraceuticals. The course is intended for graduate students in food science, nutrition, or related biological science fields. Cooperative: open to WSU degree-seeking students.

FS 511 Foods Lipids
3 credits
To gain an understanding of the functionality fats in our foods and the beneficial and detrimental health related aspects of fats in our diets. Emphasis will be placed on relationships among fat and oil chemistry and the physiological results of eating foods containing specific triacylglycerols, fatty acids, and other lipids. Recent research and popular literature will supplement the discussions. Cooperative: open to WSU degree-seeking students.

FS 512 Protein Structure and Function
2 credits
Chemistry/biochemistry of proteins/enzymes applied to food research and industry; protein functionality/enzyme technology application to food industry. Cooperative: open to WSU degree-seeking students.

FS 513 Food Carbohydrates
3 credits
This course will provide insight into structure-function relationships of polysaccharides within food systems as a function of their respective molecular structures and physical characteristics. Cooperative: open to WSU degree-seeking students.

FS 514 Starch Chemistry
3 credits
The course will provide insight into structure-function relationship of starch through case study-teaching in a student-centered classroom. Cooperative: open to WSU degree-seeking students.
Prereq: CHEM 275/CHEM 276 or Chem 277/CHEM 278, BIOL 380 or BIOL 300, or permission from instructor.

FS 516 Food Laws
2 credits
Become familiar with government statutes and regulations that contribute to a safe, nutritious, and wholesome food supply. Understand more about the law and the US legal system relevant to the regulation of the manufacture and sale of food and supplements, including jurisdictional issues, administrative law, and tort, contract, corporate, environmental, labor and criminal law issues. Senior or Graduate student standing recommended. Cooperative: open to WSU degree-seeking students.

FS 517 Scientific Writing
2 credits, max 4
Planning, writing, reporting, reviewing and evaluating current food-related research. Cooperative: open to WSU degree-seeking students. Preference will be given to graduate students in their second year or higher of study.

FS 518 Oral Seminar
1 credit
Development of skills and communication tools and techniques for oral presentations of current food science research. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students. Preference will be given to graduate students in their second year or higher of study.

FS 520 Instrumental Analysis
2 credits
Theory and techniques involved in the use of various instruments in modern biological laboratories; topics include chromatography, spectrometry, sterilization, sample preparation, radioisotope techniques, electrophoresis, centrifugation, and fermentation. (Spring only) Cooperative: open to WSU degree-seeking students.
Prereq: Permission.

FS 521 Food Rheology
3 credits
Rheology is the study of flow, deformation and friction. This course, will cover the fundamentals of rheology, including stress, strain, flow behaviors, pipe flow, viscoelasticity, and tribology. In the lab component, we will learn how to correctly set up and run tests. Both the lecture and the lab will focus on sound application of rheological principles for interpretation of rheological data. Cooperative: open to WSU degree-seeking students.

FS 522 Sensory Evaluation of Food and Wine
3credits
Joint-listed with FS 422.
Theory, principles and application of sensory evaluation techniques to evaluate appearance, aroma, flavor and texture of foods and wine. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: FS 110 or FS 113; and STAT 251.

FS 525 Engineering Principles for Foods
3 credits
Engineering principles of mass and energy balances, fluid flow, heat transfer, mass transfer, psychrometrics, refrigeration, and drying are applied to processing of food products. The engineering problem-solving method is emphasized in determining solutions to application problems. Cooperative: open to WSU degree-seeking students.
Prereq: FS 303, PHYS 111, and MATH 160 or MATH 170 .

FS 529 Dairy Products
3 credits
Joint-listed with FS 429.
Dairy chemistry, microbiology, sanitation, product development and processing from cow to consumer. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 250, BIOL 300, and FS 303.

FS 530 Dairy Products Lab
1 credit
Joint-listed with FS 430.
Students gain hands-on skills formulating, processing, evaluating and analyzing dairy products. Communication and critical thinking skills are also developed in this laboratory course. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

FS 532 Advanced Food Microbiology
3 credits
Discuss current topics in foodborne pathogen including novel detection, method, virulence, and pathogenesis, and their interaction with environment and host. Recommended Preparation: BIOL 115, BIOL 250, and FS 416. Cooperative: open to WSU degree-seeking students.

FS 536 Principles of Sustainability
3 credits
Cross-listed with ENVS 536. Joint-listed with FS 436.
Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: Junior or higher standing .

FS 538 Introduction to Physical Properties of Food
2 credits
Thermophysical behavior of foods and biopolymers, including water transport/activity, rheological, thermal, dielectric and barrier properties. Newtonian and non-Newtonian flow; Viscous, viscoelastic, and Hookean behavior. Relationship between rheology of food biopolymers and structure, composition, temperature, and plasticizer content. Recommended preparation one undergraduate course in calculus. Cooperative: open to WSU degree-seeking students.
Prereq: FS 432, FS 460, MATH 310, or Permission .

FS 564 Food Toxicology
3credits
Joint-listed with FS 464.
General principles of toxicologic evaluation of chemicals, which intentionally or unintentionally enter the food chain. Toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 300 or BIOL 380.

FS 565 Wine Microbiology and Processing
3 credits
Joint-listed with FS 465.
Technical principles related to the processing and fermentation of wines with an emphasis on microbiology. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: BIOL 250 and BIOL 300.

FS 570 Advanced Food Technology
3 credits
Joint-listed with FS 470.
Physical principles of food preservation and recent advances in food technology including process control and control systems. Recommended Preparation: FS 432 and FS 460. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: FS 302 or FS 303.

FS 575 Food Quality Management
3 credits
Discuss the principles and practices of commonly used quality management systems used to maintain and improve the quality of their products and services. Use statistical tools to monitor and assess quality. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 251, FS 302 and FS 303 .

FS 583 Advances in Cereal Chemistry and Technology
3 credits
This course provides in-depth information on wheat chemistry and technology as well as chemistry and uses of other cereal grains and legumes. Emphasis will be given to composition and functionality of wheat as related to processing and product quality, along with reviews of recent advances in cereal chemistry and technology. Cooperative: open to WSU degree-seeking students.

FS 588 Food Science Teaching Practicum
1-3 credits
Supervised teaching in a university setting. Cooperative: open to WSU degree seeking students.
Prereq: Admission to graduate program and Permission.

FS 598 (s) Internship
Credit arranged .

FS 599 Non-thesis Master's Research
Credit arranged.

FS 600 Doctoral Research & Thesis
Credit arranged.

FOREIGN LANGUAGE (FL)

FL 200 (s) Seminar
Credit arranged.

FL 204 (s) Special Topics
Credit arranged.

FL 299 (s) Directed Study
Credit arranged.

FL 400 (s) Special Topics
Credit arranged.

FL 401 MLC International Experience
1 credit
Gen Ed: Senior Experience
This course is designed to align with the international experience component required of every French, Spanish, and Modern Language Business major within the Department of Modern Languages and Cultures. An international experience includes an 8-to-15 week pre-approved event. Each student participating in the international experience will be required to complete a final project that will showcase their cultural awareness through analytical and critical processes. In addition, every student participating in this course will be required to take the STAMP (STAndards-based Measurement of Proficiency) exam to evaluate communicative proficiency.

FL 404 (s) Special Topics
Credit arranged.

FL 498 (s) Internship
Credit arranged.

FL 499 (s) Directed Study
Credit arranged.

FL 505 (s) Professional Development
Credit arranged.

FOREIGN LANGUAGE--ENGLISH (FLEN)

FLEN 200 (s) Seminar
Credit arranged.

FLEN 204 (s) Special Topics
Credit arranged.

FLEN 205 Uncommon Traveler
1 credit
This seminar is a meditation on the art of travel. It will examine questions such as, "How do we experience travel and get the most out of a journey?" and use a variety of materials to explore how travel becomes a meaningful experience.

FLEN 210 Introduction to Classic Mythology
3 credits
Gen Ed: Humanities
Introduction to classical myths and legends, focusing on the classical stories of creation, gods, and heroes.

FLEN 243 English Word Origins
3 credits
Fundamental Latin and Greek roots of words used in the humanities, social and natural science; emphasis on terminology of fields in which students are interested; introduction to the history of the English Language and its relationship with other languages; knowledge of Greek or Latin is not required.

FLEN 270 Introduction to Greek and Roman Civilization
3 credits
Gen Ed: Social Science
Cross-listed with HIST 270.
Survey of the development of Greek and Roman Civilization, 2000 BC-500 AD.

FLEN 298 (s) Internship
Credit arranged.

FLEN 299 (s) Directed Study
Credit arranged.

FLEN 307 Institutions of the European Union
3 credits
Gen Ed: Social Science, International
Cross-listed with POLS 307
A cross-cultural examination of the European Union, its history, evolution, and current functioning; social, cultural, and political differences among union partners; economic structure and demographics; business culture.

FLEN 313 French/Francophone Literature in Translation
3 credits
Gen Ed: Humanities, International
Major modern French and Francophone authors in English translation; knowledge of French is not required. (Spring, alt/yrs)

FLEN 315 French/Francophone Cinema in Translation
3 credits
Gen Ed: International
Representative works of French and Francophone cinema studied and discussed in English translation; knowledge of French is not required. (Spring, alt/yrs.)

FLEN 322 German Culture through Film
3 credits
Representative works of German cinema studied and discussed in English translation; knowledge of German is not required.

FLEN 324 Topics in German Literature in Translation
3 credits, max 6
Gen Ed: Humanities, International
Major German-language authors in English translation; knowledge of German is not required.

FLEN 325 Contemporary Chinese Culture and Customs
1-3 credits, max 3
This course focuses on contemporary trends in Chinese culture and customs in daily life, education, business, and foreign relations. Providing students with a basic understanding of Chinese geography, history, philosophy, and etiquette, this course is taught in English.

FLEN 326 Chinese Cinema in Translation
3 credits
This course introduces students to China and Chinese culture through the lens of Chinese cinema. This class covers the major landmarks in Chinese film history and will help familiarize students with representative movements, directors, actors and actresses in the Chinese film industry. Students will also be introduced to basic Chinese phrases and concepts that will help further their appreciation of Chinese culture and artistic traditions. This course is taught in English.

FLEN 327 Chinese Literature in Translation
3 credits
This course introduces students to important works of Chinese literature that have been translated into English. The intent of this course is to make these works more accessible to a Western, non-Chinese speaking audience. Students will study classical works to more contemporary writing by Chinese expatriates and Chinese American authors. This course is taught in English.

FLEN 331 Japanese Anime
3 credits
Gen Ed: Humanities, International
Selected Japanese animated films are studied as cultural products; each film is situated in its socioeconomic, political, cultural, and/or historical contexts. Japanese language proficiency not required.

FLEN 390 Representation and Reality in Spanish Cinema
3 credits
Examines how Spanish film represents contemporary issues such as immigration and identity for domestic and international audiences.

FLEN 391 Hispanic Film
3 credits
Gen Ed: Humanities, International
Cross-listed with LAS 391
Open to all students. A maximum of 3 cr in FLEN 391 and FLEN 394 may be counted toward a major in Spanish. Genre, structure, and style of representative fiction and nonfiction films of Spain and Latin America.

FLEN 394 Latin American Literature in Translation
3 credits
Gen Ed: Humanities, International
Cross-listed with LAS 394
A maximum of 3 cr in FLEN 391 and FLEN 394 may be counted toward a major in Spanish. Major Spanish-language authors in English translation; knowledge of Spanish is not required. (Alt/yrs)

FLEN 396 Ecuador/Amazon/Galapagos
3 credits
Analysis of Ecuadorian and Andean culture through classes, service-learning projects in Quito, living with a host family, and studying biodiversity and ecotourism in the Amazon Rainforest and on the Galápagos Islands.

FLEN 398 (s) Internship
Credits arranged.

FLEN 400 (s) Seminar
Credit arranged.

FLEN 404 (s) Special Topics
Credit arranged.

FLEN 498 (s) Internship
Credit arranged.

FLEN 499 (s) Directed Study
Credit arranged.

FLEN 501 (s) Seminar
Credit arranged.

FLEN 502 (s) Directed Study
Credit arranged.

FLEN 504 (s) Special Topics
Credit arranged.

FOREST RESOURCES (FOR)

FOR 102 Introduction to Forest Management
2 credits
Intro to forestry, current management issues, timber and non-timber resources, educational and professional opportunities. Includes regional field trips ranging in length from one afternoon to one weekend. Cooperative: open to WSU degree-seeking students.

FOR 200 (s) Seminar
Credit arranged.

FOR 203 (s) Workshop
Credit arranged.

FOR 204 (s) Special Topics
Credit arranged.

FOR 210 Winter Harvesting
1 credit
This is an introduction to chainsaw safety and operation, precision timber falling, and winter harvesting methods taught as an intermediate-level forestry field practicum during the final week of winter break. All day classes take place on the University of Idaho Experimental Forest. Safety instruction covers methods taught in state and federal land agencies and other popular faller safety programs.
Prereq: Instructor Permission .

FOR 220 Forest Biology & Dendrology
3 credits
Phylogenetic approach to understanding the systematics, morphology, geography, and ecology of the major species of North American woody plants. Includes identification and classification of important tree species of North American and other important woody plants of the Pacific Northwest and northern Rocky Mountains. Three lectures and two 1.5-hour labs a week; two 1-day field trips.
Prereq or **Coreq:** BIOL 114.

FOR 221 Principles of Ecology
3 credits
Cross-listed with REM 221 and WLF 220.
Principles of ecology and their relevance to management of natural resources. Major topics include plant and wildlife population, community, ecosystem, and landscape level processes and how these processes interact with the environment. Exploration of how ecosystems are affected by humans and global change. Introduction to the types of questions asked by ecologists, the principal concepts and theories that guide ecological inquiry, and the methods that are used to answer ecological questions. Both terrestrial and aquatic systems are considered.
Prereq: BIOL 102/BIOL 102L or BIOL 114 or BIOL 115 or PLSC 205; or Permission.

FOR 235 Society and Natural Resources
3 credits
Gen Ed: Social Science
Cross-listed with NRS 235.
An exploration of how people use, value, manage, impact, and are affected by natural resources; course emphasizes social and economic realities and political and legal processes in a context of current and historical natural resource issues. Two lectures and one 1-hr small discussion group meeting a week.

FOR 255 Nursery Irrigation and Fertilization
1 credit
An introduction to nursery irrigation and fertilization practices commonly found in forest tree seedling and native plant nurseries. This course aims to provide some of the important theory behind the practices used every day in successful crop production. The course will be taught by faculty and staff at the UI Pitkin Forest Nursery and managed as part of the annual Position Description process. The course is developed and is presently offered online.

FOR 274 Forest Measurement and Inventory
3 credits
Practical techniques for the design and execution of vegetation measurements for the inventory of forests, understory, and fire-fuels. Course offered in fall and summer. Summer offering is an intensive three-week course held at the University of Idaho McCall Field Campus in McCall, Idaho. Field trips occur frequently to provide hands-on training in forest measurement techniques. (Fall, Summer only)
Prereq: MATH 143; or SAT math score of 610 or above, or ACT math score of 27 or above.
Prereq or **Coreq:** MATH 144 .

FOR 275 Forestry Resource Sampling
2 credits
Principles and practice of natural resource inventory, forest sampling and data analysis techniques, LIDAR, forest growth, and quantitative decision support. Lab analysis examples and use of Excel and statistical packages are integrated into lectures. Field trips required.
Coreq: FOR 274 and STAT 251 .

FOR 299 (s) Directed Study
Credit arranged.

FOR 310 Indigenous Culture and Ecology
3 credits, max 9
This course is designed to explore the challenge for Indigenous and mainstream science of balancing traditional and modern world cultures at odds with one another through an understanding of multiple ways of knowing with respect to natural resources and ecological understanding. The course covers a range of themes including decolonizing methodologies, Indigenous research methodologies, and Indigenous statistics. Case-studies, collaborations with local tribes, and field trips are used to explore course themes.
Prereq: REM 221/FOR 221/ WLF 220 and FOR 235/NRS 235 .

FOR 324 Forest Regeneration
3 credits
Natural and artificial regeneration of forest ecosystems; reproduction methods; selection of seed source and stock type; nursery cultural practices; tree improvement; site preparation methods to establish regeneration. One lecture and one 2-hr lab a week. Two all day field trips. A semester-long project requires time spent weekly in a nursery to regularly monitor plant development under varied environmental conditions (approximately 45 hours over the 18-week spring semester in addition to lectures, labs and out-of-class studying). Cooperative: open to WSU degree-seeking students.
Prereq: FOR 274, SOIL 205 and SOIL 206
Coreq: FOR 330 .

FOR 326 Fire Ecology and Management
3 credits
Credit may only be earned in FOR 326 or FOR 426, but not both. The study of wildfire as a biophysical and ecological process, including controls of wildfires, ecological effects of wildfires, fire history, and fire in the context of global environmental change. Current issues in fire management in the Western US and globally, including readings and discussions of recent scientific literature. One-day field trip with data collection and formal lab write up. (Fall only).
Prereq: FOR 221 or REM 221 .

FOR 330 Forest Soil and Canopy Processes
4 credits
Above- and below-ground biophysical processes that determine how forest ecosystems function. Emphasis is on interactions affecting forest productivity including soil nutrient cycles, light energy, water and nutrient acquisition. Process modeling is used to illustrate effects of complex interactions on carbon budgets. Applications include effects of environmental stress and disturbance such as forest management, fire, pests and global climate change. Builds from general ecology (FOR 221/ REM 221) by exploring processes controlling forest production, and establishes a foundation to address forest management questions in FOR 324 and FOR 424. Two lec and one 4-hr lab a week, including several field trips.
Prereq: SOIL 205; and MATH 143 or MATH 160; and PHYS 100/ PHYS 100L or PHYS 111/PHYS 111L; and FOR 221 or REM 221 .

FOR 375 Introduction to Spatial Analysis for Natural Resource Management
3 credits
Cross-listed with NRS 375.
Methods and techniques for obtaining quantitative and qualitative geospatial information from aerial and satellite images, maps, and the Global Positioning System for input into geographic information systems. Analysis of geospatial data for mapping, monitoring and planning associated with all aspects of natural resource management. Two lec and one 2-hr lab a wk.
Prereq: College Algebra.

FOR 398 (s) Renewable Natural Resources Internship
Credit arranged
Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F.
Prereq: Permission of department .

FOR 400 (s) Seminar
Credit arranged.

FOR 403 (s) Workshop
Credit arranged.

FOR 404 (s) Special Topics
Credit arranged.

FOR 405 (s) Professional Development
Credit arranged
Professional education and enrichment of forestry personnel. Credit earned in this course will not be accepted toward graduate degree programs but may be used for undergraduate programs.
Prereq: permission.

FOR 424 Silviculture Principles and Practices
4 credits
Gen Ed: Senior Experience
Theory underlying silvicultural practices to control forest composition and growth, including forest stand dynamics, tree growth and quality, and growth-density relationships. Study of intermediate stand treatments and reproduction methods. Final project required involving field data collection and forest modeling to develop and mark silvicultural prescriptions. 3-hrs of lecture and 2-hrs of lab per week.
Prereq: Senior standing and FOR 274, FOR 220 or other plant identification course, FOR 330, or instructor permission .

FOR 426 Global Fire Ecology and Management
3 credits
Credit may only be earned in FOR 326 or FOR 426, but not both. This course is only available to distance education students. Integrated fire-related ecological effects of fire on vegetation, soils, and air quality; natural and changing role of fire in forests, woodlands, shrublands and rangelands; influence of global change including climate and invasive species; fire as a management tool; application to current issues. (Fall only)
Prereq: FOR 221 or REM 221; and Instructor Permission .

FOR 427 Prescribed Burning Lab
3 credits
Gen Ed: Senior Experience
Planning, conducting and evaluating prescribed burns designed to accomplish natural resource management objectives. Sampling, models and analysis used in writing required fire use plan. 5 days of field trips; some on Saturdays. (Fall only)
Prereq: REM 144, and Senior standing; and Permission
Prereq or Coreq: FOR 326 .

FOR 429 Landscape Ecology
3 credits
Cross-listed with FOR 429
Ecological relationships and conservation issues for biotic communities across the landscape, including spatial and temporal dynamics and patterns, and importance of landscapes in maintenance of ecosystem diversity and function. One or more field trips; one 2-3 hour lab period per week. Recommended Preparation: Familiarity with spreadsheet programs and problem solving using computers. (Spring only)
Prereq: FOR 221 or REM 221.

FOR 430 Forest Operations
3 credits
Overview of the primary equipment and harvesting systems used in modern forest operations, including field design, layout, and administration of timber sales, logging production and cost estimation, laws, and certification. A brief introduction to quantitative forest planning methods is also provided. There are 2-3 early morning trips and one Saturday field lab (Fall only). Cooperative: open to WSU degree-seeking students.
Prereq: FOR 102, PHYS 100/PHYS 100L or PHYS 111/PHYS 111L
Prereq or Coreq: MATH 144.

FOR 431 Low Volume Forest Roads
2 credits
Design and field layout of access roads for forest management, through a combination of field labs and use of modern, GIS-based forest road engineering software. Field study includes design of at least one current industry or agency forest road design project. There are 2-3 early morning trips and one Saturday field lab. (Fall, Alt/yrs)
Prereq or Coreq: MATH 144
Coreq: FOR 430 or Permission .

FOR 433 Fire and Fuel Modeling
2 credits
Learn to use and critically evaluate spatial fire behavior prediction systems, with attention to assumptions, uncertainty, sensitivity, and probability analysis. Topics include fuels classification systems, scale considerations, thematic mapping, and GIS overlay analysis, and how to access on-line geospatial data and decision-support tools. Read and discuss primarily literature on quantitative spatial analysis in fire science, engage in hands-on laboratory exercises, and prepare written reports comparing management alternatives with regards to fire behavior, fire effects, and ecological departure.
Prereq: FOR 375, GEOG 385, or Permission
Coreq: FOR 450 .

FOR 435 Remote Sensing of Fire
3 credits
Joint-listed with FOR 535
The course describes the state of the art algorithms and methods used for mapping and characterizing fire from satellite observations. The course will link the physical aspects of fire on the ground with the quantities that can be observed from remote sensing, and present an overview of the different aspects of environmental fire monitoring. The course will be accompanied by weekly lab sessions focused on the processing of satellite data from sensors used operationally for fire monitoring. This course assumes that you are familiar with the fundamental concepts of mathematics and physics, understand basic remote sensing techniques, and can use maps and GIS data layers. For graduate credit, additional literature review and a class project including evaluation of new, advanced technologies is required. (Spring)
Prereq: FOR 375 or Permission .

FOR 436 Cable Systems
2 credits
Overview of the major cable logging systems. Trigonometry and physical mechanics of cable systems, including analysis of forces, tensions, and payload capacity. Field layout and analysis of cable corridors using small yarders on the UI Experimental Forest using integrated field planning and GIS-based cable system design software. There are 2-3 early morning trips and one Saturday field lab. (Fall, Alt/yrs)
Prereq or Coreq: MATH 144
Coreq: FOR 430 or Permission .

FOR 444 Prescribed Fire For Ecologically-Based Management
2-3 credits
Learn about prescribed burning in support of ecologically-based management through reading, discussion and participating in hands-on service learning, planning, conducting and monitoring prescribed burns, reading and discussing local ecology and management, working collaboratively, and developing skills in fire management. Course requires travel as well as pre, during and post-travel writing, discussion and presentations.
Prereq: REM 144 and Junior Standing; or Instructor Permission.

FOR 447 Woody Plant Physiology
3 credits
Joint-listed with FOR 547
Examine woody plant interactions with their environment and tolerance or avoidance of stress. This course covers quantitative analysis of environmental biophysics, gas exchange, water relations and nutrition in woody plants. Students will also learn to use all of the major methods/equipment used in woody plant physiology research. Includes two weekly 1-hour lectures and one weekly 3-hour lab. Students registered for 500-level credit must complete a research project and presentation in addition to the requirements for the 400-level credit.

FOR 450 Fire Behavior
2 credits
Understand the physical and chemical processes controlling combustion and fire behavior. Gain in-depth knowledge of commonly-used, point-scale fire behavior models and tools, including key assumptions and limitations. Critically review and discuss scientific literature, current topics, and case studies. Lab sessions include designing and undertaking small-scale fire behavior experiments, developing simple quantitative models, and a field trip.
Prereq: FOR 326; and PHYS 100/PHYS 100L or PHYS 111/PHYS 111L
Coreq: FOR 433 .

FOR 451 Fuels Inventory and Management
2 credits
Tools, quantitative analysis, and approaches for inventory and management of fuels for wildland fires over large, diverse areas in forests, woodlands, shrubland, and grasslands. Critically review and synthesize relevant scientific literature.
Prereq: FOR 375, REM 144 and FOR 274 or REM 411 .

FOR 454 Air Quality, Pollution, and Smoke
3 credits
Joint-listed with FOR 554
Assessment of the controls and drivers of emission processes and impacts on air quality from ires, industry, and other natural sources. Overview of the combustion and emission process, how these emissions impact the 'quality of air', and what models exist to monitor the emission. Other topics to include: recent EPA and other guidelines for smoke management planning, attainment issues, atmospheric transport and deposition processes. Additional work required for graduate credit.

FOR 462 Watershed Science and Management
3 credits
Influence of land management practices on hydrologic processes, water quality, and riparian habitat w/emphasis on wildland watersheds. One day field trip.
Prereq: MATH 143; and PHYS 100/PHYS 100L or PHYS 111/PHYS 111L, or high school equivalent.

FOR 468 Forest and Plant Pathology
2 credits
A survey of plant diseases. Emphasis on forest trees and other woody plants. Organisms that cause diseases. Strategies to minimize negative effects. Symbiotic roles of microbes in plants. Two hours of lecture, and two hours of lab per week, in addition to multiple field trips (as weather allows) to observe diseases and their effects. (Spring only)
Prereq: FOR 220 and FOR 330 .

FOR 472 Remote Sensing of the Environment
3-4 credits
Cross-listed with NRS 472
Current airborne and satellite systems, data acquisition on ground and from remote locations, instrumentation, imagery interpretation and digital analysis, applications for natural resource science and management. Two 75-minute lectures and one two-hour lab per week. Recommended Preparation: MATH 143. Cooperative: open to WSU degree-seeking students.

FOR 473 ECB Senior Presentation
1 credit
Gen Ed: Senior Experience
Cross-listed with FISH 473, NRS 473, REM 473, RMAT 473, and WLF 473
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with FOR 485 or FOR 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).
Prereq: Instructor Permission.

FOR 483 Senior Project Presentation
1 credit
Cross-listed with FISH 483, NRS 483, REM 483, and WLF 483
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with FOR 485 or FOR 497.

FOR 484 Forest Policy and Administration
2 credits
Cross-listed with NRS 484
Evaluation of land and forest problems and policies in the U.S.; analysis of current conditions and policies; historical development of governmental and private agencies concerned with the administration of forest conservation program. Recommended Preparation: FOR 235.
Prereq: Junior standing.

FOR 485 Ecology and Conservation Biology Senior Project
1-3 credits, max 3
Cross-Listed with FISH 485, NRS 485, and WLF 485
Scholarly work; learning objectives include development and formal proposal of a specific project and conducting the project or research with the guidance of a faculty mentor.

FOR 490 The Resilient Landscape
3 credits
Gen Ed: Senior Experience
Cross-listed with LARC 480.
A capstone course addressing the concept of trade-offs in coupled social ecological technological systems, where landscapes and the communities they support are adaptive and evolving but the ideal is rarely attainable. This is a reading, critical thinking and discussion course with assessment based on class participation in a term project, problem solving, verbal and written communication, collegiality and collaboration (Spring only).
Prereq: ENGL 102 and Junior standing .

FOR 493 Business of Forestry
2 credits
Technical assessment of forestry from a business perspective at the stand and landscape levels, including an examination of factors that affect public and private landowner decision making regarding management of timberland. Course integrates concepts from silviculture, forest management, and natural resource policy into decision making framework.
Prereq: Junior or Senior standing.

FOR 497 (s) Senior Thesis
1-4 credits
Independently plan and conduct a thesis project; write and defend the thesis under supervision of an advisor.
Prereq: Senior standing and minimum 3.20 GPA or Permission.

FOR 498 (s) Renewable Natural Resources Internship
Credit arranged
Supervised field experience with an appropriate public or private agency. Required for cooperative education students.
Prereq: Permission of department.

FOR 499 (s) Directed Study
Credit arranged
For the individual student; conferences, library, field, or lab work.
Prereq: Senior standing, GPA 2.5, and Permission.

FOR 500 Master's Research and Thesis
Credit arranged.

FOR 501 (s) Seminar
Credit arranged
Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.
Prereq: Permission.

FOR 502 (s) Directed Study
Credit arranged.

FOR 503 (s) Workshop
Credit arranged
Selected topics in the conservation and management of natural resources.
Prereq: Permission.

FOR 504 (s) Special Topics
Credit arranged.

FOR 505 (s) Professional Development
Credit arranged.

FOR 514 Forest Biometrics
3 credits
This course provides a broad overview of forest biometrics, including forestry-specific sampling approaches, development of allometric relations, and use of remote sensing datasets.
Prereq: STAT 431 or equivalent.

FOR 515 Physical Hydrology
3 credits
A quantitative treatment of the physical processes that control water fluxes in the environment. Specific emphasis on evaporation, transpiration, snow processes and soil water flow. (Fall only, Alt/yrs)

FOR 516 Current Literature in the Hydrologic Effects of Forest Management
1 credit
Evaluation and discussion of how management activities affect hydrologic processes and flow regimes in forested watersheds. Seminar based on primary literature. May take only once. (Spring only, Alt/yrs)

FOR 522 Belowground Processes
3 credits
Belowground Processes considers current advancements in understanding of root growth and development, water and nutrient acquisition, rhizosphere functions, soil microbial community composition and functions, organic matter decomposition, and symbiotic associations between plants and microbes. Examples focus mainly on forest and wildland terrestrial ecosystems. Students learn various techniques for studying belowground processes and apply them in self-directed, hypothesis-driven projects. Offered every other year during fall semester.
Prereq: Graduate standing or instructor permission .

FOR 526 Fire Ecology
3 credits
Fire-related ecology of plant and animal species in wildlands; effects of fire occurrence and suppression on physical environment, landscapes, and processes in both natural and managed ecosystems. Two days of field trips. (Alt/yrs)
Prereq: general ecology course.

FOR 529 Ecosystem Analysis and Modeling
3 credits
Terrestrial ecosystem processes, analysis, and modeling from the leaf to the landscape scale; techniques for measuring and modeling ecosystem attributes; integration with land management and climate change impacts. Field trip required. (Fall only)

FOR 531 Invasion Biology
3 credits
An introduction to the biology of invasive species, covering plants, animals, and microbial invasives. The course will review relevant readings from the primary literature, especially those dealing with the current state of our knowledge of invasives, their ecology, control, and implications for public policy. (Spring only)
Prereq: Basic introductory genetics class and ecology.

FOR 535 Remote Sensing of Fire
3 credits
Joint-listed with FOR 435
The course describes the state of the art algorithms and methods used for mapping and characterizing fire from satellite observations. The course will link the physical aspects of fire on the ground with the quantities that can be observed from remote sensing, and present an overview of the different aspects of environmental fire monitoring. The course will be accompanied by weekly lab sessions focused on the processing of satellite data from sensors used operationally for fire monitoring. This course assumes that you are familiar with the fundamental concepts of mathematics and physics, understand basic remote sensing techniques, and can use maps and GIS data layers. For graduate credit, additional literature review and a class project including evaluation of new, advanced technologies is required. (Spring)
Prereq: FOR 375 or Permission .

FOR 546 Science Synthesis and Communication
3 credits
This course is an online course only. Critically review science literature and write both brief and in-depth syntheses to address applied questions in science and management. Learn best practices for summarizing and communicating science effectively. Discuss challenges for application of science in management. Examples will focus on wildland fire science and management.

FOR 547 Woody Plant Physiology
3 credits
Joint-listed with FOR 447
Examine woody plant interactions with their environment and tolerance or avoidance of stress. This course covers quantitative analysis of environmental biophysics, gas exchange, water relations and nutrition in woody plants. Students will also learn to use all of the major methods/equipment used in woody plant physiology research. Includes two weekly 1-hour lectures and one weekly 3-hour lab. Students registered for 500-level credit must complete a research project and presentation in addition to the requirements for the 400-level credit.

FOR 551 Current Literature in Forest Ecology/Tree Physiology
1 credit, max arranged
Review recent articles in Forest Ecology and Physiology journals. Students choose, critically review, and discuss the articles to develop critical-thinking skills and confidence in their knowledge of the literature. Graded P/F.

FOR 552 Current Literature in Environmental Remote Sensing
1 credit, max arranged
Cross-liisted with NRS 552
Review, present, and discuss recent articles related to remote sensing of the environment. Students choose, critically review, and discuss the articles to develop critical-thinking skills, remote sensing research strategies, and confidence in their knowledge of the literature. Graded P/F.

FOR 554 Air Quality, Pollution, and Smoke
3 credits
Joint-listed with FOR 454
Assessment of the controls and drivers of emission processes and impacts on air quality from ires, industry, and other natural sources. Overview of the combustion and emission process, how these emissions impact the 'quality of air', and what models exist to monitor the emission. Other topics to include: recent EPA and other guidelines for smoke management planning, attainment issues, atmospheric transport and deposition processes. Additional work required for graduate credit.

FOR 555 Current Topics: Regeneration/Restoration
1 credit, max arranged
Review recent articles pertaining to natural and artificial regeneration of native plants, including nursery production, restoration practices, and post-disturbance treatments. Students choose, critically review, and discuss the articles to develop critical-thinking skills and confidence in their knowledge of the literature. Graded P/F. Recommended Preparation: FOR 324, FOR 424, and FOR 551.

FOR 557 Advanced Fire Behavior
3 credits
Credit may be earned in only one of the following: FOR 450 or FOR 557.This course is an online course only. Understand the processes that control fire behavior in forest and rangelands, including combustion, emissions and heat release, and related fire effects. Use theory and advanced knowledge with scientific literature and case studies to critically assess the assumptions and limitations of limitations of surface and crown fire models, including the varying influences of fuels, terrain, and environmental conditions.

FOR 584 Natural Resource Policy Development
3 credits
This course is an online course only. The development of natural resource policy with emphasis on the policy process at the federal level in the U.S.; the role of and interrelationships between staff, committees, agencies and elected officials; the relationship of science and scientists with policy and politicians in the development of natural resource policy, including preparation of testimony related to natural resource science and policy issues; implementation of policy within the natural resource agencies and judicial interpretation of major natural resource policies in the U.S. Recommended Preparation: An upper-division course in natural resource and/or environmental policy (Spring only)

FOR 587 Wildland Fire Policy
2 credits
This course is an online course only. Relationships between fire science and management and the federal laws and regulations that affect fire management in wildland ecosystems; the politics of wildland fire; and the effects of wildland fire on wildland-urban interface (WUI) communities. Recommended preparation is an upper division course in natural resource, environmental policy, or FOR 584. (Fall only)

FOR 597 (s) Practicum
Credit arranged.

FOR 598 (s) Internship
Credit arranged.

FOR 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

FOR 600 Doctoral Research and Dissertation
Credit arranged
Prereq: admission to the doctoral program in "natural resources" and Permission of department.

FOR 601 (s) Seminar
Credit arranged.

FRENCH (FREN)

Vertically-related courses in this subject field are: FREN 101 - FREN 102 - FREN 201 - FREN 202. Any one of the following courses may be considered the terminal course for the related vertical sequence above: FREN 301 or FREN 302. A maximum of 16 credits may be earned for vertical credit in any language in the Department of Modern Languages & Cultures.

FREN 101 Elementary French I
4 credits
Gen Ed: Humanities, International
Pronunciation, vocabulary, reading, spoken French, and functional grammar. Students with French experience who place higher than FREN 101 on the placement exam may not enroll in FREN 101, but may earn credit for FREN 101 by successfully completing a higher vertically-related course.

FREN 102 Elementary French II
4 credits
Gen Ed: Humanities, International
Pronunciation, vocabulary, reading, spoken French, and functional grammar.
Prereq: FREN 101 or placement exam .

FREN 105 Beginning French Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the beginning French level. Graded P/F.

FREN 200 (s) Seminar
Credit arranged.

FREN 201 Intermediate French I
4 credits
Gen Ed: International
Reading, grammar review, speaking, and writing.
Prereq: FREN 102 or placement exam.

FREN 202 Intermediate French II
4 credits
Gen Ed: International
Reading, grammar review, speaking, and writing.
Prereq:FREN 201 or placement exam.

FREN 204 (s) Special Topics
Credit arranged.

FREN 205 Intermediate French Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the intermediate French level. Graded P/F.

FREN 299 (s) Directed Study
Credit arranged.

FREN 301 Advanced French Grammar
3 credits
Gen Ed: International
Comprehensive review of French grammar. Recommended for students who wish to continue in upper-division French courses and for prospective teachers of French. (Fall, alt/yrs.)
Prereq:FREN 202 or placement exam .

FREN 302 Advanced French Writing Skills
3 credits
Gen Ed: International
Further development of writing skills in various kinds of writing. Recommended for students who wish to continue in upper-division French courses and for prospective teachers of French. Recommended Preparation: FREN 202. (Fall, alt/yrs.)

FREN 304 Connecting French Language and Culture
3 credits
Gen Ed: International
Practice of linguistic proficiencies within simulated cultural frames. Recommended Preparation: FREN 202. (Spring, alt/yrs.)

FREN 307 French Phonetics
3 credits
Gen Ed: International
Contrastive analysis; acquisition and corrective practice of sounds and intonation patterns; phonetic description and transcription. Recommended Preparation: FREN 202. (Spring, alt/yrs)

FREN 308 Advanced French Conversation
3 credits
Gen Ed: International
Further development of speaking skills; discussion on topics of cultural interest and current events. Recommended Preparation: FREN 202. (Fall, alt/yrs.)

FREN 316 French-English Translation Skills
3 credits
Theory and practice of translation, French-English and English-French, using a variety of types of text. Recommended Preparation: FREN 202. (Fall, alt/yrs.)

FREN 398 (s) Internship
Credit arranged.

FREN 400 (s) Seminar
Credit arranged
Prereq: Permission.

FREN 404 (s) Special Topics
Credit arranged.

FREN 407 (s) French & Francophone Literatures
3 credits, max 9
Gen Ed: International
For advanced students; representative works from various genres of French and Francophone literature. Recommended Preparation: Two 300-level French courses. Cooperative: open to WSU degree-seeking students. (Spring, every three years)

FREN 408 (s) French and Francophone Culture and Institutions
3 credits, max 9
Gen Ed: International
For advanced students; contemporary social and political institutions in France and the Francophone world, with discussion on topics of current interest. Recommended Preparation: Two 300-level French courses. (Spring, every three years)

FREN 419 French & Francophone Cinema
3 credits
For advanced students; representative works from French and Francophone cinema. Recommended Preparation: Two 300-level French courses. (Spring, every 3 years)

FREN 449 (s) Practicum in Tutoring
1 credit, max 2
Tutorial services performed by advanced students under faculty supervision. Graded P/F.
Prereq: Permission of department.

FREN 496 (s) Proseminar
1-3 credits, max 12
May be graded P/F when grading system is uniform for all students in the class.
Prereq: Permission.

FREN 498 (s) Internship
Credit arranged .

FREN 499 (s) Directed Study
Credit arranged .

GENETICS (GENE)

GENE 200 (s) Seminar
Credit arranged.

GENE 207 Introduction to Biotechnology
3 credits
Cross-listed with PLSC 207
Offers an overview of modern biotechnology, focusing on basic concepts and applications of biotechnology with regards to plants, animals, environment and microorganisms, and medicine. Recommended preparation: CHEM 101 or CHEM 111. (Fall, alt even/yrs)

GENE 299 (s) Directed Study
Credit arranged.

GENE 314 General Genetics
3 credits
Principles of molecular genetics, microbial genetics, cytogenetics, qualitative genetics, quantitative genetics, and population genetics. (Spring only)
Prereq: BIOL 115 or BIOL 154 or Permission.

GENE 400 (s) Seminar
Credit arranged.

GENE 440 Advanced Laboratory Techniques
4 credits
Cross-listed with PLSC 440
Intensive hypothesis-driven laboratory course that will prepare the student for research in molecular biology; emphasis on areas of microbial physiology, microbial genetics, immunology, and pathogenic microbiology. (Spring only)
Prereq: BIOL 250.

GENE 488 Genetic Engineering
3 credits
Joint-listed with GENE 588, Cross-listed with PLSC 488
Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)
Prereq: GENE 314 or BIOL 310.

GENE 499 (s) Directed Study
Credit arranged.

GENE 501 (s) Seminar
Credit arranged.

GENE 502 (s) Directed Study
Credit arranged.

GENE 588 Genetic Engineering
3 credits
Joint-listed with GENE 488, Cross-listed with PLSC 588
Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)
Prereq: GENE 314 or BIOL 310.

GEOGRAPHY (GEOG)

GEOG 100 Physical Geography
3 credits
Gen Ed: Natural and Applied Sciences
Natural environment; nature, distribution, and relationships of climate, landforms, oceans, vegetation, hydrography, and soils. Three lec and one 2-hr lab a wk; may involve evening classes.

GEOG 100L Physical Geography Lab
1 credit
Gen Ed: Natural and Applied Sciences
Natural environment; nature, distribution, and relationships of climate, landforms, oceans, vegetation, hydrography, and soils. Three lec and one 2-hr lab a wk; may involve evening classes.

GEOG 165 Human Geography
3 credits
Gen Ed: Social Science, International
Intro to geographical dimension in human behavior and how this is evident in population distribution, rural and urban land use, and social, economic, and political attributes of societies.

GEOG 200 World Regional Geography
3 credits
Gen Ed: Social Science, International
Countries, regions, and peoples of the world; interrelationships between humans and their physical and cultural environments.

GEOG 203 (s) Workshop
Credit arranged.

GEOG 204 (s) Special Topics
Credit arranged.

GEOG 260 Introduction to Geopolitics
3 credits
Gen Ed: Social Science, International
The course introduces students to contemporary approaches to geopolitics through the exploration of key geographic concepts and the ideas of structure and agency. Topics include terrorism, nationalism, militarism, borders, and environmental geopolitics. Current events are discussed to exemplify the concepts.

GEOG 299 (s) Directed Study
Credit arranged).

GEOG 301 Meteorology
3 credits
Atmospheric processes that produce weather; temperature; moisture, clouds, and precipitation; synoptic-scale weather; severe storms; weather instrumentation, weather maps, and forecasting; influences of weather on humans and impacts of humans on weather. (Fall only)
Prereq: MATH 143 or equivalent .

GEOG 313 Global Climate Change
3 credits
Joint-listed with GEOG 513.
Scientific basis of the climate system and global climate changes; process-based understanding of past, present and future climate change; natural and anthropogenic influences; interactions between climate, society and ecosystems; scientific review and politicization; climate change solutions and opportunities. Students in GEOG 513 will be required to solve additional quantitative problem sets and synthesize journal articles. (Fall only)

GEOG 330 Urban Geography
3 credits
Joint-listed with GEOG 531.
Theory and models of the functions, origin, development, structure, and distribution of cities; land-use and housing, globalization and cities, neighborhood transition, urban economic development, and geographic aspects of city planning. Also considers urban social differences, inequality, and conflicts over the uses and meanings of city space. Graduate students are required to synthesize journal articles and complete an additional independent research paper.

GEOG 340 Business Location Decisions
3 credits
Locational decision making in primary, secondary, and tertiary industries; resulting patterns of industrial location; importance of location and impact of industries on other characteristics of communities as demonstrated by examples from each sector. One 1-day field trip. Additional assignments and exams reqd for grad cr.

GEOG 345 Global Economic Geography
3 credits
Joint-listed with GEOG 545.
An overview of major developments and contemporary debates in the economic geography literature; economic globalization, the spatial dimensions of resource use, agriculture, industry, and post-industry landscapes, economic aspects of land-use change, location theory and case studies. Additional projects required for graduate credit.

GEOG 350 Geography of Development
3-4 credits
Gen Ed: International
Joint-listed with GEOG 550.
Geographic appraisal of resource problems and development potentials of the Third World. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit.

GEOG 360 Population Dynamics and Distribution
3-4 credits
Gen Ed: International
Effects of fertility, mortality, and migration on population size and distribution; demographic trends in U.S. and other societies and how these relate to economic, political, environmental, and other factors. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit. (Spring only)

GEOG 365 Political Geography
3 credits
Gen Ed: Social Science, International
Joint-listed with GEOG 565
Surveys the geographic distribution of political processes, actions, and outcomes at variety of spatial scales - international, national, and local. Topics include origins of the modern territorial state, conflicts over access to and use of space, access to natural resources, nationalism, elections, democratization, globalization, terrorism, and the politics of identity. Graduate students are required to complete an additional independent research paper.

GEOG 385 GIS Primer
3 credits
Intro to basic concepts and applications of geographic information systems (GIS), lab exercises on PC-based GIS packages. Two lec and 2 hrs of lab a wk. Prereq: basic knowledge of PC-based operating system.

GEOG 390 Cartographic Design & Geovisualization
3 credits
Map projections, map generalization, cartographic design, map symbology, and typography; statistical, isarithmic and multivariate mapping; static versus dynamic mapping; interactive and internet mapping; cartographic animation; 2 hrs of lab/wk. (Spring only)
Prereq: GEOG 385 .

GEOG 400 (s) Seminar
Credit arranged.

GEOG 401 Climatology
3 credits
Joint-listed with GEOG 512.
Physical basis for climatic processes and patterns; mechanics of global atmospheric circulation; radiation balance and heat budget of the earth; models of weather patterns and climate. Additional assignments and quantitative exercises required for graduate credit. (Spring, alt/yrs)

GEOG 402 GIS Skills Development
1-3 credits, max 6
Hands-on skills development in GIS and related technologies. Primary topics vary by semester, but may include topics such as GPS/GIS integration, web-based GIS, project management and cartographic design. May be taken for credit multiple times.

GEOG 403 (s) Workshop
Credit arranged.

GEOG 404 (s) Special Topics
Credit arranged.

GEOG 405 Climate and Water Resources Change
3 credits
Joint-listed with GEOG 505.
Physical processes that determine the climate of Earth and its past and future changes: greenhouse effect, radiative and heat feedback processes, orbital parameter theory. Climate and Environmental Periods. Atmospheric and water resources change within the instrumental period of records. Future climate and water resources: Paleo-perspectives on "greenhouse warming". Review of paleoclimate techniques: dendro-climatology, marine and lake sediments, polar and mountain ice core paleo-climatic records, paleo-climatic and historic data analysis. Additional assignments and exams reqd for grad cr.
Prereq: GEOG 401 and STAT 251, or Permission.

GEOG 407 Spatial Statistics and Modeling
3 credits
Joint-listed with GEOG 507.
Introduces the basic theories and methods of spatial analysis used for statistical modeling and problem solving in human and physical geography. The special nature of spatial data (point, continuous, and lattice) in the social and physical sciences is emphasized. Topics include point pattern analysis, spatial autocorrelation analysis, spatial multivariate regression, local indicators of spatial association, and geographically weighted regression. Extra oral and/or written assignments required for grad credit. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 431 or permission .

GEOG 410 Biogeography
3 credits
Geographic distributions of plant and animal species, and causes of patterns, including climate, geology, speciation, extinction, and migration.
Prereq: GEOG 100/GEOG 100L or FOR 221/REM 221 .

GEOG 411 Natural Hazards and Society
3 credits
Overview of the geophysical conditions associated with the development of natural hazards including social science principles and methodologies for addressing critical questions relating to managing the vulnerability and risks associated with various natural hazards.

GEOG 420 Land, Resources, and Environment
3 credits
Social, legal, cultural, political, and economic aspects of land-use control both in the United States and worldwide. Contrasts are made between indigenous and contemporary cultures within a sustainable geography-of-limits and political ecology framework. (Spring only)

GEOG 424 Hydrologic Applications of GIS and Remote Sensing
3 credit
Joint-listed with GEOG 524.
Concepts of area-based hydrologic modeling and assessment and the various types of spatially distributed information commonly used in these activities, such as topographic data, vegetation cover, soils and meteorologic data. Hands-on experience in manipulating these types of data sets for hydrologic applications. Recommended Preparation: FOR 462, BE 355, or CE 325; or Equivalent.
Prereq: GEOG 385 or equivalent work experience .

GEOG 430 Climate Change Ecology
3 credits
Climate change impacts on ecosystems, plants, and animals; feedbacks to climate change; climate change mitigation related to ecosystems and species.
Prereq: BIOL 114 or ENVS 101 or GEOG 100 or FOR 221 or REM 221 or Permission of Instructor .

GEOG 435 Climate Change Mitigation
3 credits
Joint-listed with GEOG 535.
Overview of the sources and magnitude of greenhouse gas (GHG) emissions at various scales from international to local; barriers to and options for reducing GHG emissions via new energy sources, increased efficiency, capture of wasted energy and land management practices. For graduate credit, a major independent project is required as well as additional assignments.

GEOG 440 Geoeconomics
3 credits
Course will explore the relationship between economy, geopolitics and foreign policy using alternative approaches to neoclassical economics and classical economic geography at the global and regional scale. Steady state economy, New-Keynesianism, dependence and uneven development, the world-systems perspective, evolutionary economics and Marxist perspectives are presented. Cooperative: Open to WSU degree-seeking students.
Prereq: GEOG 260, 345, and STAT 251 or Permission of Instructor .

GEOG 453 Water and Energy Systems
3 credits
The class covers the basic science of water and energy and the applied interrelationships of those two resources in today's society. The broad spectrum coverage of the topic includes the energy linkage to both the supply and demand of water and also the water linkage to the supply of and demand for energy. The class includes development of systems dynamics models for describing the resource interactions. Recommended Preparation: Basic Physical Sciences.
Prereq: MATH 143 .

GEOG 455 Societal Resilience and Adaptation to Climate Change
3 credits
Consequences of human causes, mitigation and adaptations, community resilience strategies, and policy implications to human impacts of global climate change. Concentration on social science issues including opportunities and constraints for resilience and adaptation to global climate change. Recommended Preparation: GEOG 411.

GEOG 475 Intermediate GIS
3 credits
Course covers in-depth geographic information systems models and applications. Topics include network analysis, watershed analysis, spatial interpolation, terrain mapping and analysis, 3D visualization, and GIS modeling. Students develop spatial analysis and modeling skills to solve real-world problems.
Prereq: GEOG 385
Coreq: STAT 251 .

GEOG 479 GIS Programming
3 credits
This course introduces students to basic computational concepts using Python, an object-oriented scripting language, for data processing, analysis and application development. Contemporary research in analytical geography has placed an increasing demand on the computational skills of its practitioners. The advances in spatial data analysis and geographical modeling have also largely out-paced the capabilities of standard statistical software. At the same time, the multidisciplinary nature of the spatial science often translates into the need to deal with disparate data sources, formats and programming languages. As such, students undertaking research are often confronted with a daunting set of tasks that are seldom covered in an integrated fashion in course work. This course is designed to address this situation.
Prereq: GEOG 475 or by instructor permission.

GEOG 483 Remote Sensing/GIS Integration
3 credits
Joint-listed with GEOG 583.
Concepts and tools for the processing, analysis, and interpretation of digital images from satellite and aircraft-based sensors. The integration of remotely sensed date and the other spatial data types within Geographic Information Systems. Additional assignments and exams reqd for grad cr. Two lecture and 2 hours of lab a week.
Coreq: GEOG 385 or Equivalent.

GEOG 488 Geography of Energy Systems
3 credits
This course examines geographic dimensions associated with the production, distribution, acquisition, consumption and storage of energy. Geographic tools and techniques will be used to analyze, understand and deconstruct complexity and nuance across various modes of production, current topics and challenges along with future considerations such as transitioning to renewable energy sources. The course will split time between classroom settings, field trips to energy installations on campus and across the Inland Northwest, in addition applied learning activities.

GEOG 489 Capstone Preparation
1 credit
Planning and preparation for senior project to be carried out in subsequent semester. Students learn expectations for the senior project, plan their project, gather data and other resources and develop an agreement with their faculty mentor.

GEOG 493 Senior Capstone in Geography
3 credits
Gen Ed: Senior Experience
A capstone course in which students integrate their knowledge of human and physical geography, as well as geographic techniques, to propose solutions to real-world problems. Students gain experience in working in small groups and in written and oral presentation of project results, and will be evaluated with respect to the skills acquired in their degree program. Topics may include, but are not limited to, issues such as sustainable development in rural communities, global and regional food and energy distribution, quantifying and analyzing global or regional indicators of environmental and/or societal trends. Open to senior geography majors or to non-majors with instructor¿s permission.
Prereq: GEOG 489, Department of Geography Majors or Permission .

GEOG 498 (s) Internship
Credit arranged
Graded pass/fail.

GEOG 499 (s) Directed Study
Credit arranged.

GEOG 500 Master's Research and Thesis
Credit arranged.

GEOG 501 (s) Seminar
Credit arranged.

GEOG 502 (s) Directed Study
Credit arranged.

GEOG 503 (s) Workshop
Credit arranged.

GEOG 504 (s) Special Topics
Credit arranged.

GEOG 505 Climate and Water Resources Change
3 credits
Joint-listed with GEOG 405.
Physical processes that determine the climate of Earth and its past and future changes: greenhouse effect, radiative and heat feedback processes, orbital parameter theory. Climate and Environmental Periods. Atmospheric and water resources change within the instrumental period of records. Future climate and water resources: Paleo-perspectives on "greenhouse warming". Review of paleoclimate techniques: dendro-climatology, marine and lake sediments, polar and mountain ice core paleo-climatic records, paleo-climatic and historic data analysis. Additional assignments and exams reqd for grad cr.
Prereq: GEOG 401 and STAT 251, or Permission.

GEOG 507 Spatial Statistics and Modeling
3 credits
Joint-listed with GEOG 407.
Introduces the basic theories and methods of spatial analysis used for statistical modeling and problem solving in human and physical geography. The special nature of spatial data (point, continuous, and lattice) in the social and physical sciences is emphasized. Topics include point pattern analysis, spatial autocorrelation analysis, spatial multivariate regression, local indicators of spatial association, and geographically weighted regression. Extra oral and/or written assignments required for grad credit. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 431 or permission .

GEOG 513 Global Climate Change
3 creduts
Joint-listed with GEOG 313.
Scientific basis of the climate system and global climate changes; process-based understanding of past, present and future climate change; natural and anthropogenic influences; interactions between climate, society and ecosystems; scientific review and politicization; climate change solutions and opportunities. Students in GEOG 513 will be required to solve additional quantitative problem sets and synthesize journal articles. (Fall only)

GEOG 524 Hydrologic Applications of GIS and Remote Sensing
3 credit
Joint-listed with GEOG 424.
Concepts of area-based hydrologic modeling and assessment and the various types of spatially distributed information commonly used in these activities, such as topographic data, vegetation cover, soils and meteorologic data. Hands-on experience in manipulating these types of data sets for hydrologic applications. Recommended Preparation: FOR 462, BE 355, or CE 325; or Equivalent.
Prereq: GEOG 385 or equivalent work experience .

GEOG 531 Urban Geography
3 credits
Joint-listed with GEOG 330.
Theory and models of the functions, origin, development, structure, and distribution of cities; land-use and housing, globalization and cities, neighborhood transition, urban economic development, and geographic aspects of city planning. Also considers urban social differences, inequality, and conflicts over the uses and meanings of city space. Graduate students are required to synthesize journal articles and complete an additional independent research paper.

GEOG 535 Climate Change Mitigation
3 credits
Joint-listed with GEOG 435.
Overview of the sources and magnitude of greenhouse gas (GHG) emissions at various scales from international to local; barriers to and options for reducing GHG emissions via new energy sources, increased efficiency, capture of wasted energy and land management practices. For graduate credit, a major independent project is required as well as additional assignments.

GEOG 540 Business Location Decisions
3 credits
Locational decision making in primary, secondary, and tertiary industries; resulting patterns of industrial location; importance of location and impact of industries on other characteristics of communities as demonstrated by examples from each sector. One 1-day field trip. Additional assignments and exams reqd for grad cr.

GEOG 542 Spatial Statistics
3 credits
The course extends the range of spatial analysis from GEOG 507. Topics include spatial covariance structures, methods of spatial model estimation, (e.g., iterated LS, GLS, MLE, penalized estimation), spatial interpolation and surface estimation, geostatistics/kriging and gravity model estimation and local parametric estimation procedures. Categorical spatial data analysis, Poisson and logistic regression, mixed models, contingency tables, models of discrete temporal and landscape change and graph-theoretic analogues, log-linear models. Additional topics, time permitting: introduction to hierarchical modeling and Bayesian spatial techniques and MCMC estimation, Markov random fields, stochastic space-time analysis and diffusion, time series of stationary series and vector autoregression with Granger causality, space-time covariance heterogeneity issues. Recommended: An additional course in multivariate statistics, probability theory or mathematical statistics.
Prereq: GEOG 507 and STAT 431.

GEOG 545 Global Economic Geography
3 credits
Joint-listed with GEOG 345.
An overview of major developments and contemporary debates in the economic geography literature; economic globalization, the spatial dimensions of resource use, agriculture, industry, and post-industry landscapes, economic aspects of land-use change, location theory and case studies. Additional projects required for graduate credit.

GEOG 550 Geography of Development
3-4 credits
Joint-listed with GEOG 350.
Geographic appraisal of resource problems and development potentials of the Third World. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit.

GEOG 560 Population Dynamics and Distribution
3-4 credits
Effects of fertility, mortality, and migration on population size and distribution; demographic trends in U.S. and other societies and how these relate to economic, political, environmental, and other factors. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit. (Spring only)

GEOG 565 Political Geography
3 credits
Joint-listed with GEOG 365
Surveys the geographic distribution of political processes, actions, and outcomes at variety of spatial scales - international, national, and local. Topics include origins of the modern territorial state, conflicts over access to and use of space, access to natural resources, nationalism, elections, democratization, globalization, terrorism, and the politics of identity. Graduate students are required to complete an additional independent research paper.

GEOG 583 Remote Sensing/GIS Integration
3 credits
Joint-listed with GEOG 483.
Concepts and tools for the processing, analysis, and interpretation of digital images from satellite and aircraft-based sensors. The integration of remotely sensed date and the other spatial data types within Geographic Information Systems. Additional assignments and exams reqd for grad cr. Two lecture and 2 hours of lab a week.
Coreq: GEOG 385 or Equivalent.

GEOG 591 History and Philosophy of Geography
3 credits
Evolution of geography as a discipline, focusing on post-scientific revolution developments and identification of major themes in contemporary geographic thought.

GEOG 596 Geography Department Seminar
1 credit
Weekly or bi-weekly department seminar with talks given by visiting and local speakers on topics relevant to geography.

GEOG 598 (s) Internship
Credit arranged
Practical, on-the-job experience with governmental agencies or commercial establishments; oral and written reports are presented in which the student reviews and constructively criticizes the experience gained; salary may be received for services performed. Graded pass/fail.
Prereq: Permission .

GEOG 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

GEOG 600 Doctoral Research and Dissertation
Credit arranged.

GEOLOGICAL ENGINEERING (GEOE)

GEOE 200 (s) Seminar

GEOE 398 (s) Internship

GEOE 403 (s) Workshop
Credit arranged.

GEOE 404 (s) Special Topics
Credit arranged.

GEOE 407 Rock Mechanics
3 credit
Mechanical properties of rocks and rock masses; lab and insitu techniques to estimate strength, stress distribution, and deformation behavior in rock masses; application of analytical tools such as the finite element method to design stable excavations and support systems in rock.
Prereq: ENGR 350.

GEOE 428 Geostatistics
3 credits
Cross-listed with GEOL 428.
Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 301. Cooperative: open to WSU degree-seeking students.

GEOE 436 Geological Engineering Analysis and Design
3 credits
Geological engineering analysis and design methods, including data collection, stability analysis, and ground reinforcement techniques; individual and teamwork approaches to formulation and solving geological engineering problems. One 1-day field trip.
Prereq: CE 360 or graduate standing.

GEOE 465 Excavation and Materials Handling
3 credits
Principles of excavation design and handling of earth materials related to construction projects, quarries, and mines; blasting, excavation planning and scheduling, equipment selection and replacement, cost estimating, geographic information and management information systems. Computerized design using Gemcom and/or other appropriate software.
Prereq: CE 211 or Permission.

GEOE 499 (s) Directed Study
Credit arranged).

GEOE 500 Master's Research and Thesis
Credit arranged.

GEOE 501 (s) Seminar
Credit arranged.

GEOE 502 (s) Directed Study
Credit arranged.

GEOE 503 (s) Workshop
Credit arranged.

GEOE 504 (s) Special Topics

GEOE 517 Tunnel Design and Construction
3 credits
Geotechnical considerations for tunneling, drilling and blasting, TBM, ground support, haulage, ventilation, water handling, and trenchless technology. Application of analytical techniques such as the finite element method to design stable underground structures and support systems.
Prereq: GEOE 407 or Permission.

GEOE 535 Seepage and Slope Stability
3 credits
Cross-listed with CE 563.
Principles governing the flow of water through soils; mechanics of stability analysis of slopes, landslides, and embankments for soil and rock masses; probabilistic analyses; stabilization methods. Cooperative: open to WSU degree-seeking students. (Alt/even yrs, Spring only)
Prereq: CE 360 or GEOE 436; or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

GEOE 598 (s) Internship
Credit arranged.

GEOE 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

GEOLOGY (GEOL)

GEOL 101 Physical Geology
3 credits
Gen Ed: Natural and Applied Sciences
The earth, its composition, structure, and natural processes. Three lec and 2 hrs of lab a wk; one 1-day field trip.

GEOL 101L Physical Geology Lab
1 credit
Gen Ed: Natural and Applied Sciences
The earth, its composition, structure, and natural processes. Three lec and 2 hrs of lab a wk; one 1-day field trip.

GEOL 102 Historical Geology
3 credits
Gen Ed: Natural and Applied Sciences
Evolution of the physical earth, plants, and animals; techniques used in interpretation of geologic history. Includes one 1-day field trip.
Coreq: GEOL 102L or permission..

GEOL 102L Historical Geology Lab
1 credit
Gen Ed: Natural and Applied Sciences
Evolution of the physical earth, plants, and animals; techniques used in interpretation of geologic history.

GEOL 111 Physical Geology for Science Majors
4 credits
Introductory course in earth science for geology and other science majors. Three lec and one 2-hr lab a wk; two 1-day field trips.

GEOL 111L Physical Geology for Science Majors Lab
1 credit .

GEOL 200 (s) Seminar
Credit arranged.

GEOL 203 (s) Workshop
Credit arranged.

GEOL 204 (s) Special Topics
Credit arranged.

GEOL 212 Principles of Paleontology
4 credits
Studies of morphology, classification of fossil groups, and utility of fossils in interpreting depositional environments and ages of sedimentary rocks. Three lec and one 2-hr lab a wk; one 1- to 2-day field trip. Recommended Preparation: GEOL 102.

GEOL 249 Mineralogy and Optical Mineralogy
4 credits
Principles of crystallography, crystal chemistry, and crystal structure; mineral identification; principles of optical mineralogy and use of the polarized light microscope. Three lec and one 2-hr lab a wk; two 1-day field trips.
Prereq: GEOL 111/GEOL 111L or GEOL 101/GEOL 101L, and CHEM 111/CHEM 111L.

GEOL 290 Field Geology Methods
3 credits
Introduction to field mapping and field techniques; introduction to measuring and interpreting sedimentary sequences and tectonic structures; preparation of reports based on field data collection, background reading, and analysis or multiple datasets. Accident and health insurance required. One 4-hr course meeting per week; two 1-day field trips; one 5-day field trip. (Spring only)
Prereq: GEOL 101/GEOL 101L or GEOL 111/GEOL 111L, or GEOL 102/GEOL 102L.

GEOL 299 (s) Directed Study
Credit arranged.

GEOL 309 Ground Water Hydrology
3 credits
Occurrence, movement, and properties of subsurface water; intro to ground water geology and hydrology.
Prereq: GEOL 101/GEOL 101L or GEOL 111, and MATH 130 or MATH 143 with a grade of 'C' or better.

GEOL 324 Principles of Stratigraphy and Sedimentation
4 credits
Interrelationship of sedimentation and stratigraphy and processes and factors influencing genesis of sedimentary rocks. Topics include weathering, fluid flows, sediment mechanics, depositional environments, stratigraphic logging and field data collection, sedimentary lithofacies, provenance, and application of principles of interpretation of stratigraphic record. Two lec and one 4-hr lab per week; two 1-day field trips; One 5-day field trip.
Prereq: GEOL 102/GEOL 102L and MATH 143 with a grade of 'C' or better.

GEOL 326 Igneous and Metamorphic Petrology
4 credits
Hard rock petrology plus megascopic and microscopic petrography of igneous and metamorphic rocks. Two lec and two 2-hr labs a wk; two 1-day or one 2-day field trips.
Prereq: GEOL 249 and MATH 143 with a grade of 'C' or better.

GEOL 335 Geomorphology
3 credits
Classification, recognition, origin, and significance of land forms; land form analysis in interpretation of geologic structure and history. One 2-day field trip.
Prereq: GEOL 101/GEOL 101L or GEOL 102/GEOL 102L or GEOL 111/GEOL 111L, or GEOG 100/GEOG 100L; and MATH 143 with a grade of 'C' or better; or Permission .

GEOL 344 Earthquakes and Seismic Hazards
3 credits
The geology of earthquakes including the cause of fault rupture, seismic waves, focal mechanisms, and earthquakes associated with all fault types in a variety of tectonic settings; methods of identifying paleo-earthquakes in the geologic record, and the assessment of seismic hazard and risk in active fault environments. One 3-day field trip.
Prereq: GEOL 101/GEOL 101L or GEOL 111/GEOL 111L; and MATH 143 with a grade of 'C' or better.

GEOL 345 Structural Geology
4 credits
Investigation of deformed rocks; mechanics of brittle and continuum failure, stress and strain relations, characterization, description, classification of folded and fractured rocks. Three hours of lecture and one 2-hr 45-min lab a wk; one week-long mandatory field trip. (Spring only)
Prereq: MATH 143 with a grade of 'C' or better; and one semester high-school trigonometry or MATH 144; and GEOL 101/GEOL 101L or GEOL 111/GEOL 111L; and PHYS 111/PHYS 111L or PHYS 211/PHYS 211L.

GEOL 361 Geology and the Environment
3 credits
Environmental consequences of development of geologic resources; including issues of waste disposal, pollution and human health; natural hazards and their impact on humans and the environment. Two 1-day field trips.
Prereq: GEOL 101/GEOL 101L or GEOL 111/GEOL 111L; and MATH 143 with a grade of 'C' or better .

GEOL 375 Geology of National Parks
2 credits
Primarily for non-geology majors who want to acquire a better knowledge of geologic concepts and processes through study of geology of national parks. One 6-day field trip.
Prereq: GEOL 101/GEOL 101L, GEOL 102/GEOL 102L, GEOL 111/GEOL 111L, or GEOG 100/GEOG 100L; and MATH 143 with a grade of 'C' or better.

GEOL 398 (s) Internship
Credit arranged.

GEOL 400 (s) Seminar
1 credit, max arranged
Participation in departmental colloquium.
Prereq: MATH 143 with a grade of 'C' or better.

GEOL 403 (s) Workshop
Credit arranged.

GEOL 404 (s) Special Topics
Credit arranged.

GEOL 405 (s) Professional Development
Credit arranged.

GEOL 407 Basin Analysis
3 credits
Joint-listed with GEOL 507
Formation mechanisms and characteristics of sedimentary basins. Modern concepts of tectonics and sedimentary basin analysis, includingtectonics of subsidence, detrital mineral provenance, thermal histories, and facies models. Lithofacies distributions and structural styles in a variety of basin types with specific examples from around the world. For 500-level credit an additional paper is required. One 2-day and one 5-day field trip. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: GEOL 324 and MATH 143 with a grade of C or better .

GEOL 410 Techniques of Groundwater Study
3 credits
Collection and analysis of field data for reconnaissance ground water studies. Two weekend field trips.
Prereq: MATH 143 with a grade of 'C' or better
Prereq or **Coreq:** GEOL 309 .

GEOL 417 Advanced Paleontology
3 credits
Fossil assemblage analyses and report writing; marine faunal assemblage 1st half semester; nonmarine floral assemblage 2nd half semester. Three 2-hr labs a wk; one 1-day field trip.
Prereq: MATH 143 with a grade of 'C' or better and GEOL 212; or Permission.

GEOL 422 Principles of Geophysics
4 credits
Outline of geophysical methods for geological investigations. One 1-day field trip. Course includes 3 hours of lecture and one 2 hour lab per week.
Prereq: MATH 143 with a grade of 'C' or better.

GEOL 423 Principles of Geochemistry
3 credits
Physiochemical principles applied to geologic processes. Topics covered include atmospheric geochemistry, environmental geochemistry, aqueous geochemistry, crystal chemistry, radiogenic and stable isotopes. These topics provide an overview of the principles of physics and chemistry that define geochemistry and its use to understand Earth's geology. The objective of this course is to learn how geochemical processes control the distribution of elements from the core of the Earth to the atmosphere. Includes three-day field trip.
Prereq: GEOL 249.

GEOL 424 (s) Advanced Topics in Sedimentary Rocks
3 credits
Joint-listed with GEOL 520
Modern concepts of tectonic sedimentology, depositional environments, facies models, and application of analytical techniques to stratigraphic sequences. GEOL 520 students will have an additional research project. One 5-day field trip.
Prereq: GEOL 324 .

GEOL 426 Principles of Forensic Mineralogy and Geology
3 credits
Introduction to the use of geological and mineralogical materials and techniques within the criminal/civil justice system. Topics will include the origin and description of minerals, rocks, soils and sands, fossils, industrial materials, and pollen, the history of forensic science, instrumental & forensic laboratory techniques, and the legal aspects of scientific evidence. Two lec and one 2-hr labs a wk; one 1-day field trip.
Prereq: GEOL 101/GEOL 101L or GEOL 111/GEOL 111L; and CHEM 111/CHEM 111L; and MATH 143 with a grade of 'C' or better; or Permission .

GEOL 428 Geostatistics
3 credits
Cross-listed with GEOE 428. Joint-listed with GEOL 534.
Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 301. Cooperative: open to WSU degree-seeking students.

GEOL 431 Chemical Hydrogeology
3 credits
Joint-listed with GEOL 531.
An exploration of low temperature, aqueous geochemistry principles through examination of atmospheric, geologic, and biologic influences on water chemistry in surface and near-surface hydrologic environments. For graduate credit, students are required to complete an additional independent research paper or presentation. Recommended preparation: GEOL 423.
Prereq: CHEM 111/CHEM 111L .

GEOL 432 Geologic Development of North America
3 credits
Joint-listed with GEOL 532.
Tectonic, magmatic, and sedimentary sequence studies of North American continent through time; concepts of metal and petroleum enrichment related to time and geological processes. Additional questions on two exams and written report of field trip reqd for grad cr. One 7-day field trip. GEOL 532 is a cooperative course available to WSU degree-seeking students.
Prereq: MATH 143 with a grade of 'C' or better.

GEOL 433 Geodynamics
4 credits
Joint-listed with GEOL 533.
This class focuses on the processes and mechanisms that cause motions within and on the surface of the Earth and other planets. Topics to be covered include plate boundary deformation, plate flexure, planetary heat transfer, convection in the mantle and core, melting and melt transport, magma dynamics, and large-scale lithospheric deformation. For graduate credit students will be expected to complete a research project and report. Course includes 3 hours of lecture and one 3 hour lab per week. Offered fall semester. Recommended Preparation: Math 175 or equivalent. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 143 with a grade of 'C' or better; and MATH 170 or equivalent .

GEOL 435 Glaciology and the Dynamic Frozen Earth
3 credits
Joint-listed with GEOL 535.
This course examines the physical processes that govern the frozen components of the Earth system. Idaho's changing snowpack, thinning Arctic sea ice, and accelerating glaciers are all evidence of the Earth's dynamic and rapidly changing frozen surface. These landscapes play critical roles in the climate system. Thinning and retreat of glaciers and ice sheets is on track to raise global sea level by up to a meter within student lifetimes. This course covers the mechanics and energy budgets of the frozen earth. Upon completion of this course, students will be able to describe the ways by which glaciers increase or decrease their flow, the controls on the growth and loss of sea ice, the importance of permafrost environments to the climate and landscape evolution, and how ice preserves a record of past global temperatures. Additional work required for 500-level credit. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 160 or MATH 170 .

GEOL 467 Volcanology
3 credits
Joint-listed with GEOL 567.
Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Additional projects/assignments reqd for grad cr. Two lec and one 2-hr lab a wk; seven days of field trips.
Prereq: MATH 143 with a grade of 'C' or better.

GEOL 490 Geology Field Camp
3 credits
Gen Ed: Senior Experience
Advanced field problems and methods; interpretation of field data, preparation of reports based on field observations and interpretations. Accident and health insurance required. Three week, off-campus. Cooperative: open to WSU degree-seeking students. (Summer only)
Prereq: GEOL 290 and GEOL 345; and MATH 143 with a grade of 'C' or better.

GEOL 497 (s) Practicum In Tutoring
1 credit, max 2
Tutorial services performed by advanced students under faculty supervision. Graded P/F.
Prereq: MATH 143 with a grade of 'C' or better and Permission of department.

GEOL 498 Senior Thesis
1-4 credits, max 4
Completion of original research and report. Course is taken over two semesters; first semester is graded IP until completion of second semester.
Prereq: MATH 143 with a grade of 'C' or better and Senior standing and Permission.

GEOL 499 (s) Directed Study
Credit arranged
Prereq: MATH 143 with a grade of 'C' or better.

GEOL 500 Master's Research and Thesis
Credit arranged.

GEOL 501 (s) Seminar
1 credit, max arranged
Participation in departmental colloquium.

GEOL 502 (s) Directed Study
Credit arranged.

GEOL 503 (s) Workshop
Credit arranged.

GEOL 504 (s) Special Topics
Credit arranged.

GEOL 505 (s) Professional Development
Credit arranged.

GEOL 507 Basin Analysis
3 credits
Joint-listed with GEOL 407
Formation mechanisms and characteristics of sedimentary basins. Modern concepts of tectonics and sedimentary basin analysis, includingtectonics of subsidence, detrital mineral provenance, thermal histories, and facies models. Lithofacies distributions and structural styles in a variety of basin types with specific examples from around the world. For 500-level credit an additional paper is required. One 2-day and one 5-day field trip. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: GEOL 324 and MATH 143 with a grade of C or better .

GEOL 510 (s) Geosystems
3 credits, max 6
Interdisciplinary core graduate course in earth sciences. Course will involve multiple instructors and modules framed around a common theme. Specific focus may vary from year to year. Cooperative: open to WSU degree-seeking students.

GEOL 520 (s) Advanced Topics in Sedimentary Rocks
3 credits
Joint-listed with GEOL 424
Modern concepts of tectonic sedimentology, depositional environments, facies models, and application of analytical techniques to stratigraphic sequences. GEOL 520 students will have an additional research project. One 5-day field trip.
Prereq: GEOL 324 .

GEOL 531 Chemical Hydrogeology
3 credits
Joint-listed with GEOL 431.
An exploration of low temperature, aqueous geochemistry principles through examination of atmospheric, geologic, and biologic influences on water chemistry in surface and near-surface hydrologic environments. For graduate credit, students are required to complete an additional independent research paper or presentation. Recommended preparation: GEOL 423.
Prereq: CHEM 111/CHEM 111L .

GEOL 532 Geologic Development of North America
3 credits
Joint-listed with GEOL 432.
Tectonic, magmatic, and sedimentary sequence studies of North American continent through time; concepts of metal and petroleum enrichment related to time and geological processes. Additional questions on two exams and written report of field trip reqd for grad cr. One 7-day field trip. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 143 with a grade of 'C' or better.

GEOL 533 Geodynamics
4 credits
Joint-listed with GEOL 433.
This class focuses on the processes and mechanisms that cause motions within and on the surface of the Earth and other planets. Topics to be covered include plate boundary deformation, plate flexure, planetary heat transfer, convection in the mantle and core, melting and melt transport, magma dynamics, and large-scale lithospheric deformation. For graduate credit students will be expected to complete a research project and report. Course includes 3 hours of lecture and one 3 hour lab per week. Offered fall semester. Recommended Preparation: Math 175 or equivalent. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 143 with a grade of 'C' or better; and MATH 170 or equivalent .

GEOL 534 Geostatistics
3 credits
Joint-listed with GEOL 428.
Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 301. Cooperative: open to WSU degree-seeking students.

GEOL 535 Glaciology and the Dynamic Frozen Earth
3 credits
Joint-listed with GEOL 435.
This course examines the physical processes that govern the frozen components of the Earth system. Idaho's changing snowpack, thinning Arctic sea ice, and accelerating glaciers are all evidence of the Earth's dynamic and rapidly changing frozen surface. These landscapes play critical roles in the climate system. Thinning and retreat of glaciers and ice sheets is on track to raise global sea level by up to a meter within student lifetimes. This course covers the mechanics and energy budgets of the frozen earth. Upon completion of this course, students will be able to describe the ways by which glaciers increase or decrease their flow, the controls on the growth and loss of sea ice, the importance of permafrost environments to the climate and landscape evolution, and how ice preserves a record of past global temperatures. Additional work required for 500-level credit. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 160 or MATH 170 .

GEOL 542 Advanced Structural Geology
3 credits
Concepts of linear elastic fracture mechanics as applied to the classification, origin and evolution of all types of rock fractures; continuum theory in rock mechanics; rock strength and failure criteria; stress tensors; elastic theory. Two 1-day field trips. Cooperative: open to WSU degree-seeking students.
Prereq: GEOL 345.

GEOL 549 Principles of Electron Microscopy
3 credits
Theory and principles of scanning and transmission electron microscopy as an investigative tool; includes physical principles of electron microscopy, operation and maintenance of the electron microscope, specimen preparation, and digital image capture. Lab section involves hands-on use of SEM and TEM. Students registering are required to complete a research project. One 1.5-hr lec and one 2-hr lab a week. (Fall only)

GEOL 567 Volcanology
3 credits
Joint-listed with GEOL 467.
Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Additional projects/assignments reqd for grad cr. Two lec and one 2-hr lab a wk; seven days of field trips. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 143 with a grade of 'C' or better.

GEOL 598 (s) Internship
Credit arranged.

GEOL 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

GEOL 600 Doctoral Research and Dissertation
Credit arranged.

GERMAN (GERM)

Vertically-related courses in this subject field are: GERM 101 - GERM 102 - GERM 201 - GERM 202. Any one of the following courses may be considered the terminal course for the related vertical sequence above: GERM 301 or GERM 302. A maximum of 16 credits may be earned for vertical credit in any language in the Department of Modern Languages & Cultures.

GERM 101 Elementary German I
4 credits
Gen Ed: Humanities, International
Pronunciation, vocabulary, reading, spoken German, and functional grammar. Students with German experience who place higher than GERM 101 on the placement exam may not enroll in GERM 101, but may earn credit for GERM 101 by successfully completing a higher vertically-related course.

GERM 102 Elementary German II
4 credits
Gen Ed: Humanities, International
Pronunciation, vocabulary, reading, spoken German, and functional grammar.
Prereq: GERM 101 or placement exam .

GERM 107 Beginning German Conversation Lab
1 credit, 2 max
Practice in listening comprehension and conversational skills at the beginning German level. Graded P/F.

GERM 200 (s) Seminar
Credit arranged.

GERM 201 Intermediate German I
4 credits
Gen Ed: International
Review and practice of basic language skills; increased emphasis on reading and free discussion.
Prereq: GERM 102 or placement exam.

GERM 202 Intermediate German II
4 credits
Gen Ed: International
Review and practice of basic language skills; increased emphasis on reading and free discussion.
Prereq: GERM 201 or placement exam.

GERM 204 (s) Special Topics
4 credits.

GERM 207 Intermediate German Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the intermediate German level. Graded P/F.

GERM 298 (s) Internship

GERM 299 (s) Directed Study
Credit arranged.

GERM 301 German Reading and Writing
3 credits
Gen Ed: International
Emphasis on developing writing and reading; exploration of cultural topics. (Fall, Alt/yrs) (Fall, Alt/yrs)
Prereq: GERM 202 or placement exam.

GERM 302 German Listening and Speaking
3 credits
Gen Ed: International
Emphasis on listening and speaking skills; discussion on topics of cultural interest.
Prereq: GERM 202 or placement exam.

GERM 304 German Culture and Society
3 credits
German society, political culture, and the arts.
Prereq: Germ 202 or placement exam .

GERM 307 German Film
3 credits
Study of representative German films to gain an understanding of cinematic traditions and the portrayal of cultural, political and social issues.
Prereq:GERM 202 or placement exam .

GERM 398 (s) Internship

GERM 400 (s) Seminar
Credit arranged.

GERM 402 Advanced Speaking and Writing
3 credits
Development of advanced proficiency in speaking and writing.
Prereq: Two 300-level German courses, placement exam, or instructor permission.

GERM 404 (s) Special Topics
Credit arranged.

GERM 410 German for the Professions
3 credits
Language and intercultural skills necessary for effective oral and written communication in professional settings in German-speaking countries.
Prereq: Two 300-level German courses, placement exam, or instructor permission.

GERM 420 (s) Topics in German Culture & Literature - Themes
3 credits, max 6
Gen Ed: International
For advanced students; important themes in German cultural/literary studies. Cooperative: open to WSU degree-seeking students. (Spring Alt/yrs)
Prereq: GERM 301 or GERM 302.

GERM 440 German Media
3 credits
Gen Ed: International
Reading and discussion from contemporary German-language media;focus on topics of current cultural, political, and/or social interest.
Prereq: Two 300-level German courses, placement exam, or instructor permission .

GERM 499 (s) Directed Study
Credit arranged.

HEALTH AND SAFETY (H&S)

H&S 150 Wellness Lifestyles
3 credits
Health concepts and strategies that affect one's wellness; emphasis on personal responsibility and life-style choices.

H&S 200 (s) Seminar
Credig arranged.

H&S 203 (s) Workshop
Credit arranged.

H&S 204 (s) Special Topics
Credit arranged.

H&S 232 Medical Terminology
2 credits
Intro to basic concepts of medical terminology and symbols related to medical and allied health professionals.

H&S 245 Introduction to Athletic Injuries
3 credits
Special fee course. Athletic training; recognition, evaluation, general care of athletic injuries; adhesive strapping. Two lec and one lab a wk.

H&S 288 First Aid: Emergency Response
2 credits
Emergency care of injuries form accidents or illness; patient assessment and First Aid Treatment. Basics of human anatomy, chronic and environmental diseases. Qualified students may earn a CPR/AED and First Aid certification. Lab fee required. One lecture and 1:15 lab per week.

H&S 289 Drugs in Society
2 credits
Legal implications, values, and physical, social, and emotional factors involved in the use and abuse of drugs in society.

H&S 299 (s) Directed Study
Credit arranged.

H&S 301 Peer Health Education
2 credits
This course prepares students to inform, educate, intervene and assist their campus peers to make healthy lifestyle choices. Upon completion of the course and Certified Peer Health Educator (CPE) test, students become a CPE with the Bacchus Network. Students meet once a week for 2 hours in class.

H&S 328 Community Health: Theory, Systems, and Practice
3 credits
This course examines concepts of community and public health history, philosophy, theory, science, and practice. Community health is presented as an interdisciplinary and interactive system organized to promote and protect health, prevent disease, and eliminate health disparities. It also addresses professional competencies, standards, and the important role of community health in the health care system.
Prereq: MVSC 201 .

H&S 350 Stress Management and Mental Health
2 credits
Application of behavioral stress management techniques that have the potential to relieve mental and physical stress; emphasis on development of skills related to mental and physical health.

H&S 390 Athletic Training High School Clinical Experience
1 credit
Guided observation, supervised instruction, and comprehensive team and independent teaching in high school athletic training setting. Emphasis is on supervised clinical orthopedic/general medical conditions and disabilities, injuries and illnesses. Students receive supervised clinical experience in Athletic Training under the supervision of NATA Certified Athletic Trainers.
Prereq: Permission.

H&S 391 Athletic Training Sports Medicine Clinical Experience
1 credit
Guided observation, supervised instruction, and comprehensive team and independent teaching in a sports medicine clinical setting. Emphasis is on evaluation and rehabilitation of clinical orthopedic conditions (injuries and disabilities). Students receive supervised clinical experience in Athletic Training under the supervision of NATA Certified Athletic Trainers, Physical Therapists and Exercise Physiologists.
Prereq: Permission.

H&S 392 Athletic Training General Medical & Orthopedic Clinical Experience
1 credit
Guided observation, supervised instruction, and comprehensive team and independent teaching in a medical practice setting. Emphasis is on supervised clinical orthopedic/general medical conditions and disabilities, injuries and illnesses. Students receive supervised clinical experience in Athletic Training under the supervision of NATA Certified Athletic Trainers, Physicians, Physician Assistants, and Nurses.
Prereq: Permission.

H&S 400 (s) Seminar
Credit arranged.

H&S 403 (s) Workshop
Credit arranged.

H&S 404 (s) Special Topics
Credit arranged.

H&S 423 Health Education Methods
3 credits
Joint-listed with H&S 523
Curriculum design, planning and instruction, methods and strategies, and resource materials for teaching health in school and community settings. Additional work required for graduate credit.
Prereq: H&S 150 or MVSC 201, EDCI 201, and acceptance into teacher preparation .

H&S 450 Critical Health Issues
3 credits
Provides a sampling of information that represents the current and projected trends in health; students will gain an understanding of broad public health issues and what strategies would be useful to address these problems.
Prereq: BIOL 120 and BIOL 121; or MVSC 201 .

H&S 451 Psychosocial Determinants of Health
3 credits
Investigates the social, emotional, intellectual, social, and spiritual factors influencing health behaviors. Emphasis is placed on understanding and evaluating the biopsychosocial model and the interrelation between one's physical, psychological, and social well being.
Prereq: MVSC 201 .

H&S 455 Design & Analysis of Research in Movement Sciences
3 credits
Cross-listed with PEP 455 and REC 455
This course is designed to survey the basic types of research methods often found in exercise science and health; and recreation. A variety of research designs and computerized statistical analyses are studied to help students understand the systematic nature of problem solving. Various research problems as they relate to exercise science and health; and recreation are discussed for the purpose of identifying the broad and diverse nature of research in the movement, leisure, and health professions. (Spring only)
Prereq: Junior or Senior standing.

H&S 490 Health Promotion
3 credits
Examines the philosophical, ethical and theoretical foundations of the professional practice of health promotion in school, community, and work site settings, as well as in health promotion consultant activities. Emphasis will be placed on facilitating prepared units/lessons to respective target populations such as students, employees, patients, or community members. (Spring only)
Prereq: H&S 450 or Permission .

H&S 495 (s) Practicum
1 credit, max arranged
Tutorial services performed by advanced students under faculty supervision. Graded P/F.
Prereq: Permission.

H&S 498 (s) Internship
1-9 credits
Supervised field work.
Prereq: REC 445 and Senior standing.

H&S 499 (s) Directed Study
Credit arranged.

H&S 501 (s) Seminar
Credit arranged.

H&S 502 (s) Directed Studies
Credit arranged.

H&S 503 (s) Workshop
Credit arranged.

H&S 504 (s) Special Topics
Credit arranged.

H&S 505 (s) Professional Development
Credit arranged
Credit earned in this course will not be accepted toward grad degree programs.
Prereq: Permission.

H&S 523 School Health Education Methods and Administration
3 credits
Joint-listed with H&S 423.
Curriculum design, organization and administration, methods and strategies, and resource materials for teaching health in school health settings. Team leadership project and activity required for graduate credit. (Fall only)
Prereq: H&S 150 or MVSC 201.

H&S 597 (s) Practicum
1-3 credits.

H&S 599 (s) Research
Credit arranged.

HIGHER EDUCATION (HED)

HED 606 Organizational Development and Change in Higher Education
3 credits
This is a course addressing issues and methods associated with organizational change and development in higher education organizations. Students will learn about organizational issues, interventions and programs, and the processes specific to change in higher education. Emphasis will be on understanding and application of organizational development in higher education.
Prereq: Admission to the Ph.D./Higher Education Cohort.

HED 607 Social Justice Leadership in Higher Education
3 credits
This course explores the theoretical and empirical literature on higher education's responsibility to social justice and equity. Students will have opportunities to explore human diversity from perspectives other than their own. Misconceptions and prejudice where it exists, should be replaced by knowledge.
Prereq: Admission to the Ph.D./Higher Education Cohort .

HED 608 Stewardship of Higher Education
3 credits
This course is designed to give students the opportunity for applying the knowledge they have acquired throughout their coursework in higher education to real-world situations. As part of this course students will work together to design and hold a higher education leadership symposium.
Prereq: Admission to the Ph.D./Higher Education Cohort .

HED 609 Leadership in Higher Education
3 credits
This course focuses on leadership of higher education and the role it plays in complex organizational environments. Students will explore the nuances of higher education leadership and theory. This course places special emphasis on the connection between leadership and higher education cultures, and contemporary challenges of leadership in times of organizational and social change in higher education.
Prereq: Admission to the Ph.D./Higher Education Cohort.

HED 610 Governance and Public Policy in Higher Education
3 credits
This course investigates the organization and governance of higher education institutions. Internal and external influences are examined along with administrative roles, decision making, problem solving, and political realities. Current policy issues will be analyzed through the constructs of equity, efficiency, security, and liberty.
Prereq: Admission to the Ph.D./Higher Education Cohort.

HED 611 Research Internship in Higher Education
1-6 credits, max arranged
This course requires students to actively engage in a variety of project specific research tasks under the supervision of the Major Professor. Responsibilities may include: compiling literature reviews relevant to the research project; sampling and data collection; recording, analyzing and reporting data; formulating a bibliography; preparing manuscripts and conference presentations.
Prereq: Admission to the Ph.D./Higher Education Cohort.

HED 623 (s) Contemporary Issues in Higher Education
1-5 credits, max arranged
This course will provide opportunities to learn and interact with invited speakers from various departments and colleges who have leadership expertise across disciplines, networking experiences, and identifying resources and mentors for future reference.
Prereq: Admission to the Ph.D./Higher Education Cohort.

HED 625 Finance and Budgeting in Higher Education
3 credits
This course introduces students to financing methods and budgeting in higher education. Various roles of budgets will be examined in the contexts of institutional plans, resource management, control mechanisms, accountability, forecasting the future, risk tolerance, and political implications.
Prereq: Admission to the Ph.D./Higher Education Cohort.

HED 627 Law and Ethics in Higher Education
3 credits
This course serves as an overview of the legal issues that confront university personnel. Federal and State statues as well as case law will be used to instruct about legal rights and responsibilities of university administrators. In addition students will explore institutional policymaking and implementation.
Prereq: Admission to the Ph.D./Higher Education Cohort.

HISTORY (HIST)

HIST 100 What is the Study of the Past
1 credit
This course introduces students to the basic study of the human past. Students will gain a broad overview of the historical discipline and learn about the diverse methods and means of studying peoples and cultures of the past. Note: this class is open for all interested students, not simply history majors.

HIST 101 World History I
3 credits
Gen Ed: Social Science, International
Contributions to the modern world, to 1650.

HIST 102 World History II
3 credit
Gen Ed: Social Science, International
Contributions to the modern world, 1650 to present.

HIST 111 United States History I
3 credits
Gen Ed: Social Science, American Diversity
Political, diplomatic, economic, social, and cultural history; earliest times to 1877.

HIST 112 United States History II
3 credits
Gen Ed: Social Science, American Diversity
Political, diplomatic, economic, social, and cultural history; 1877 to present.

HIST 180 Introduction to East Asian History
3 credits
Gen Ed: Social Science, International
Survey of traditional and modern Chinese and Japanese history.

HIST 200 (s) Seminar
Credit arranged.

HIST 204 (s) Special Topics
Credit arranged.

HIST 211 Food through the Ages
3 credits
The comparative survey and analysis of how the choice, preparation and eating of food not only shaped and formed cultures but also defined civilizations, from hunting and gathering to the present.

HIST 212 Sex and Gender through the Ages
3 credits
Comparative analysis of sex and gender in global historical setting. Focus upon changing sexual/gender behavior both inside and outside of marriage; shifts in sexual mentalities and moral values; and the efforts to regulate, repress, or encourage forms of sexual behavior and attitudes.

HIST 213 Race and Ethnicity through the Ages
3 credits
Comparative survey of race and ethnicity across region, culture, and time; factors that create social cohesion and/or conflict; political, sociocultural, and economic dimensions of racial and ethnic relations; the making of identity and cultural mentalities in international/global settings.

HIST 214 Warfare through the Ages
3 credits
Comparative survey of war and military history from ancient times to present; emphasis on interrelationship of war, society, and technology; impact of war and violence upon human culture, environment, and everyday life.

HIST 270 Introduction to Greek and Roman Civilization
3 credits
Gen Ed: Social Science, International
Cross-listed with FLEN 270.
Survey of the development of Greek and Roman Civilization, 2000 BC-500 AD.

HIST 290 The Historian's Craft
3 credits
Introduction to the discipline of history, basic skills for course work and research, and major schools of historical writing.

HIST 300 Digital History
3 credits
This course introduces the theory and practice of digital history. Students will use digital technologies to help research and present history and related interdisciplinary subjects. Note: no prior special computing skills are required.

HIST 310 The Civil War and Reconstruction
3 credits
This course examines the causes of the Civil War in the United States, the conflict itself, and its consequences from 1830 to 1877. Topics will include the histories of slavery, abolition and race; the meanings of freedom; the nature of "total war"; and the promises and failures of Reconstruction.

HIST 315 Comparative African-American Cultures
3 credits
Gen Ed: Social Science, American Diversity, International
An overview of African American history in the U.S. from the late 19th century to the present; comparisons with the experience of African Americans in other parts of the Americas; study of important personalities and historical forces that have influenced African Americans and the societies in which they live.

HIST 316 American Indian History
3 credits
Gen Ed: American Diversity
Cross-listed with AIST 316
Course investigates Indigenous people in North America from time immemorial to present. Emphasizes Native American resilience and adaptability in the face of colonialism.

HIST 318 Colonial America: A Collision of Peoples
3 credits
Surveys North American history from the era preceding contact through the American Revolution. Emphasizes encounters and conflicts between Europeans and Native Americans, major political and economic developments, cultural and intellectual transformations, and the formation of American societies.

HIST 319 19th-century America: Expanding America
3 credits
Surveys American history in the nineteenth century. Emphasizes contests over national expansion and inclusion, war and reconstruction, and cultural reform and invention.

HIST 320 20th-century America: The Colossus
3 credits
Surveys American history in the twentieth century. Emphasizes growth of the United States as a world military and economic power, rising nationalism, battles for civil rights and reforms, and rise and consequences of popular culture.

HIST 325 The Long 1960s
3 credits
Focusing on the era between 1955 and 1975, often called the "long 1960s," this course examines the cultural, political, and social changes of these decades, particularly in the United States.

HIST 329 Idaho and the Pacific Northwest
3 credits
Gen Ed: American Diversity
Political, economic, social development; earliest times to the present.

HIST 341 Ancient Greece
3 credits
Cross-listed with RELS 341
Surveys Greek history from c. 2500 BCE to the end of the 4th century BCE, paying special attention to military, political, and cultural developments.

HIST 342 Alexander the Great and the Hellenistic World
3 credits
Surveys the conquests of Alexander the Great and the political, cultural, and social history of the Hellenistic World from c.359 BCE to c. 31 BCE.

HIST 343 The Roman Republic
3 credits
Surveys the Roman Republic from c. 509 BCE to 31 BCE, paying particular attention to military, political, and social issues and developments.

HIST 344 The Roman Empire
3 credits
Cross-listed with RELS 344
Surveys Roman history from c. 31 BCE to the 5th century CE, paying particular attention to military, political, religious, and social issues and developments.

HIST 350 The Age of Enlightenment: European Culture & Ideas, 1680-1800
3 credits
Gen Ed: Humanities, International
History of thought, material culture, and mentalities in Enlightenment society; focus upon intersection between science and enlightenment values; new ideas about individualism, democracy, race, and gender.

HIST 357 Women in Pre-Modern European History
3 credits
Gen Ed: Humanities, International
Survey of historical experience of women from the Greeks through the 17th century.

HIST 366 Modern European Cultural and Intellectual History, 1880-1980
3 credits
Gen Ed: Humanities, International
Evolution of major cultural attitudes and values in modern European society; relation between modernity and cultural modernism; the impact of war and revolution; key ideas and intellectual movements associated with Nietzsche, Freudianism, the avant-garde, existentialism, structuralism, and postmodernism.

HIST 371 History of England
3 credits
Gen Ed: International
Political, social, economic, and religious development of the British Isles, to 1688.

HIST 372 History of England
3 credits
Gen Ed: International
Political, social, economic, and religious development of the British Isles.

HIST 378 History of Science I: Antiquity to 1700
3 credits
Gen Ed: Humanities, International
Examines the changing nature of scientific thought, institutions, and technological advance from Western antiquity until 1700. Emphasis on the Scientific Revolution and the interrelations between science, culture, and society.

HIST 379 History of Science II: 1700-Present
3 credits
Gen Ed: Humanities, International
Examines the changing nature of scientific thought, institutions, and technological advance from 1700 to the present. Emphasis upon the rapid acceleration of scientific knowledge and practice in the global setting – particularly the physical sciences – as well as the strong interconnections between states, institutions, and broader sociocultural factors in the making of scientific knowledge.

HIST 380 Disease and Culture:History of Western Medicine
3 credits
Gen Ed: Social Science, International
Survey of Western medicine from Antiquity to the present. Examination of changing theories of disease, the scientific study of the human body, evolution of medical practices and treatment, the institutionalization of medical practice, and the evolution of public health policy. (Alt/yrs)
***Prereq:** Junior standing or Permission.*

HIST 382 History of Biology: Conflicts and Controversies
3 credits
Gen Ed: Social Science, International
Explores the social and intellectual development of the life sciences as a discipline in Europe and North America, with focus on biology in the 18th, 19th, and 20th centuries. Emphasis on evolutionary thought, heredity, development, social uses of biology, and women and gender. (Alt/yrs)
***Prereq:** Junior standing or Permission.*

HIST 388 History of Mathematics
3 credits
Gen Ed: Social Science, International
Cross-listed with MATH 388.
History of the development of mathematical ideas from ancient cultures to the present, including the relationship of those ideas to the cultures that produced them as well as an understanding of the mathematics involved. Cooperative: open to WSU degree-seeking students.
***Prereq:** MATH 175 or Permission .*

HIST 395 (s) Themes and Issues in History
3 credits, max 6
Examines changing themes and issues in the historical discipline; emphasis on approaches and problems in historical research; key focus on research, reading, and writing in the historical field; content will vary according to instructor.
***Prereq:** HIST 290 or Instructor Permission .*

HIST 401 (s) Seminar
Credit arranged
Gen Ed: Senior Experience
Joint-listed with HIST 501.
Research papers in U.S., Latin American, ancient, English, or European history.
Prereq: *Permission of department .*

HIST 403 (s) Workshop
Credit arranged.

HIST 404 (s) Special Topics
Credit arranged.

HIST 405 (s) Professional Development
Credit arranged
Joint-listed with HIST 505.

HIST 414 (s) History and Film
3 credits, max 6
Gen Ed: Humanities, American Diversity, International
The course focuses on the history of the Americas since 1900. Through readings, discussion and film, historical events and individuals are analyzed. Emphasis is placed on themes related to culture, race, gender, and historical memory.

HIST 420 History of Women in American Society
3 credits
Gen Ed: Social Science, American Diversity
Joint-listed with HIST 520.
Examination of the roles of women (social, economic, and political) in U.S. history from colonial times to the present.

HIST 424 American Environmental History
3 credits
Gen Ed: Social Science, American Diversity
Joint-listed with HIST 524.
History of changing American attitudes and actions toward the environment over three centuries.

HIST 430 U.S. Diplomatic History
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 530.
World power through war and the quest for peace, 1898 to present.

HIST 431 Stolen Continents, The Indian Story: Indian History to 1840
3 credits
Gen Ed: Social Science, American Diversity
Joint-listed with HIST 531. Cross-listed with AIST 431
Survey 1400 to 1840; dynamics and themes of Indian history with emphasis on Indian-White relations in the U.S. Additional work required for graduate credit.

HIST 438 Modern Mexico and the Americas
3 credits
Gen Ed: Social Science, International
Cross-listed with LAS 438.
Survey and analysis of political, economic, social, and cultural aspects from independence to present; emphasis on Iberian and Amerindian legacies, economic development, relations with U.S., and social revolution of 1910-1920.

HIST 439 Modern Latin America
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 539. Cross-listed with LAS 439.
Political, economic, social, and cultural development; search for stability; growth of nationalism.

HIST 440 Social Revolution in Latin America
3 credits
Gen Ed: Social Science, International
Cross-listed with LAS 440.
Analysis and comparison of 20th-century social revolution in selected Latin American countries: Cuba and two others; emphasis on origins of movements for social change, economic development issues, impact of the revolutions, and relations between new governments and the U.S.

HIST 441 Slavery and Freedom in the Americas
3 credits
Gen Ed: Social Science, International
Cross-listed with LAS 441.
Analysis of the way in which African slavery became the predominant labor force in the Americas from 16th century to 19th century. Emphasis on slave resistance and the international abolitionist movement. (1760s to 1888).

HIST 442 The Medieval Church: Europe in the Early and High Middle Ages
3 credits
Gen Ed: Humanities, International
Joint-listed with HIST 542, Cross-listed with RELS 442
Evolution of medieval Christian society from reign of Constantine (c. 300) to pontificate of Innocent III (1215), as expressed in monastic and mendicant orders, crusades, 12th-century Renaissance, and heresy.

HIST 443 The Medieval State: Europe in the High and Late Middle Ages
3 credits
Gen Ed: Humanities, International
Joint-listed with HIST 543, Cross-listed with RELS 443
Analysis of how the vitality of particular medieval princes, of the commercial revolution, and of such movements as development of common law was harnessed in the evolution of medieval government from feudalism to the modern state.

HIST 445 Medieval English Constitutional and Legal History: 1066-1485
3 credits
Gen Ed: Humanities, International
Joint-listed with HIST 545.
The study of the origins and development of English law and the English constitution during the Middle Ages. Additional projects/assignments required for graduate credit.

HIST 447 The Renaissance
3 credits
Gen Ed: Humanities, International
Cross-listed with RELS 447
Explores the transformative movement known as the European Renaissance. Examines how humanism not only shaped and formed art, music, literature and philosophy but also informed one's relationship to the state. Additional projects/assignments required for graduate credit.

HIST 448 The Reformation
3 credits
Gen Ed: Humanities, International
Joint-listed with HIST 548, Cross-listed with RELS 448
This course examines the social and economic as well as the theological dynamic of the Reformation. The course begins by examining the thought of Erasmus and More, continuing through that of Luther, Calvin, and Loyola, to the Anabaptists. Religious upheaval lead not only to the political and military upheaval of the Religious Wars, but also to religious debate, the echoes of which resound through to the present. Additional projects/assignments required for gradate credit.

HIST 449 Tudor-Stuart Britian 1485-1660
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 549.
This course examines the brilliance of the 1485-1660 period in British history. It is organized around three themes: the religious revolution and its consequences; the transformation of personal government of dynasties into Parliamentary government; and the cultural, social and economic ramifications that both drove and was driven by these movements. Recommended Preparation: HIST 371. Additional assignment/projects required for graduate credit.

HIST 452 Europe in the Age of the Revolution, 1770-1880
3 credits
Gen Ed: Social Science, International
The social, political, and cultural dimensions of revolutions of 1789, 1830, 1848, and 1870; impact of industrial revolution upon daily life; process of European nation-building; new ideologies of liberalism, socialism, conservatism, and romanticism.

HIST 453 Studying History in an International Setting
3-6 credits
Introduction to studying history in an international setting and history as expeditionary learning. Course covers on-site historical experience, including: museums, archives, libraries, historical monuments, daily life and culture, material culture, language, and cultural awareness and sensibility. Travel is a required part of course experience.

HIST 454 Pictures and Power: Photography, Politics, and American History
3 credits
Explores how photography has shaped struggles over social justice in the United States since the nineteenth century. Examines a range of moments – from the crisis over antebellum slavery to class conflict in the late nineteenth century, from debates over poverty in the Great Depression to social movements of the 1960s to current human rights issues. In various periods, it considers subjects including the use of photography within social movements, the ethics of photojournalistic representation, the powers and limitations of news images, the use of photographs for surveillance and propaganda, the relation between photography and identity, and the role of spectatorship.

HIST 456 Anti-Semitism and the Holocaust
3 credits
Gen Ed: Social Science, International
The roots and character of European anti-Semitism from the Roman Empire to the Nazis and beyond; special focus on the Third Reich and World War II.

HIST 457 History of the Middle East
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 557.
Survey of the Middle East from the beginning of the Islamic period to the present.

HIST 460 Conspiracies and Secret Societies in History
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 560.
The notion that human affairs are shaped by conspiratorial and occult forces bent on the achievement of secret agendas has attained wide currency. The idea that the world is governed by powerful, unseen forces has a long history that this course will explore. Additional work required for graduate credit. Recommended Preparation: HIST 101 and HIST 102. (Alt/yrs)

HIST 461 Idaho and the Pacific Northwest
3 credits
Gen Ed: Social Science, American Diversity
Political, economic, social development; earliest times to the present.

HIST 462 History of the American West
3 credits
Gen Ed: Social Science, American Diversity
Survey of major developments in the American West, from the Great Plains to the Pacific Ocean and beyond, including racial and ethnic diversity, environment, gender, politics, and economics.

HIST 463 Fashion and Identity in American Culture
3 credits
This course examines the cultural, political, and social meanings embedded in personal style in American culture during the 19th and 20th centuries.

HIST 464 Gender and Race in the American West
3 credits
This course examines the role of gender and race in the development of the diverse geographical borderlands of the US West over the 18th, 19th, and 20th centuries. In addition to looking at the social history of the region, students will also examine the West as a cultural construction that has been gendered and racialized through the development of popular culture.

HIST 466 Eastern Europe Since 1774
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 566.
Nationality, nation-building, and dissolution; emphasis on Poland, the Habsburg Empire, and the Balkans.

HIST 467 Russia to 1894
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 567.
Russia from medieval origins to 1894; development of Tsarist autocracy and serfdom; reaction, reform, and rise of the revolutionary movements.

HIST 468 Russia and Soviet Union Since 1894
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 568.
The last years of Tsarism; revolutions of 1905 and 1917; development of the Soviet Union under Lenin, Stalin, and their successors.

HIST 482 Japan, 1600 to Present
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 582
Western impact on the political, cultural, and economic fabric of Japanese society.

HIST 484 Modern China, 1840s to Present
3 credits
Gen Ed: Social Science, International
Joint-listed with HIST 584.
Last century of Qing dynasty, 1911 Revolution and Republican experiment, Revolution of 1949, and People's Republic of China.

HIST 485 Chinese Social and Cultural History
3 credits
Gen Ed: Humanities, International
Joint-listed with HIST 585.
Survey of Chinese culture and traditions during the first millennium. Additional assignment/projects required for graduate credit.

HIST 495 History Senior Seminar
3 credits
Gen Ed: Senior Experience
Directed research in primary and secondary sources, culminating in substantial research paper. Course themes and instructor will vary semester to semester.
Prereq: HIST 290 or equivalent .

HIST 497 (s) Practicum
1-3 credits, max 6.

HIST 498 (s) Internship
Credit arranged.

HIST 499 (s) Directed Study
Credit arranged.

HIST 500 Master's Research and Thesis
Credit arranged.

HIST 501 (s) Seminar
Credit arranged
Gen Ed: Senior Experience
Joint-listed with HIST 401.
Research papers in U.S., Latin American, ancient, English, or European history.
Prereq: Permission of department .

HIST 502 (s) Directed Study
Credit arranged.

HIST 503 (s) Workshop
Credit arranged.

HIST 504 (s) Special Topics
Credit arranged.

HIST 505 (s) Professional Development
Credit arranged
Joint-listed with HIST 505.

HIST 514 Colloquium in American History
Hist 514 Colloquium in American History (3 cr)
Intense reading in the historical literature on American society, focusing upon questions of race, gender, class, and geographic region. Emphasis on changing approaches to historical problems, different schools of historical thought, methodological issues, and implementation in the classroom. Content will vary with instructor.
Prereq: *Graduate Standing or Permission of the Instructor* .

HIST 520 History of Women in American Society
3 credits
Joint-listed with HIST 420.
Examination of the roles of women (social, economic, and political) in U.S. history from colonial times to the present.

HIST 522 Colloquium in European History
3 credits
Intense reading in the historical literature on European society. Emphasis on changing approaches to historical problems, different schools of historical thought, methodological issues, and implementation in the classroom. Content will vary with instructor.
Prereq: Graduate Standing or Permission of the Instructor .

HIST 524 American Environmental History
3 credits
Joint-listed with HIST 424.
History of changing American attitudes and actions toward the environment over three centuries.

HIST 530 U.S. Diplomatic History
3 credits
Joint-listed with HIST 430.
World power through war and the quest for peace, 1898 to present.

HIST 542 The Medieval Church: Europe in the Early and High Middle Ages
3 credits
Joint-listed with HIST 442
Evolution of medieval Christian society from reign of Constantine (c. 300) to pontificate of Innocent III (1215), as expressed in monastic and mendicant orders, crusades, 12th-century Renaissance, and heresy.

HIST 543 The Medieval State: Europe in the High and Late Middle Ages
3 credits
Joint-listed with HIST 443
Analysis of how the vitality of particular medieval princes, of the commercial revolution, and of such movements as development of common law was harnessed in the evolution of medieval government from feudalism to the modern state.

HIST 544 Colloquium in Global History
3 credits, max 9
Intense reading in the historical literature on topics in global history. Emphasis on changing approaches to historical problems, different schools of historical thought, methodological issues, and implementation in the classroom. Content will vary with instructor.

HIST 545 Medieval English Constitutional and Legal History: 1066-1485
3 credits
Joint-listed with HIST 445.
The study of the origins and development of English law and the English constitution during the Middle Ages. Additional projects/assignments required for graduate credit.

HIST 557 History of the Middle East
3 credits
Gen Ed: International
Joint-listed with HIST 457.
Survey of the Middle East from the beginning of the Islamic period to the present.

HIST 560 Conspiracies and Secret Societies in History
3 credits
Joint-listed with HIST 460.
The notion that human affairs are shaped by conspiratorial and occult forces bent on the achievement of secret agendas has attained wide currency. The idea that the world is governed by powerful, unseen forces has a long history that this course will explore. Additional work required for graduate credit. Recommended Preparation: HIST 101 and HIST 102. (Alt/yrs)

HIST 567 Russia to 1894
3 credits
Joint-listed with HIST 467.
Russia from medieval origins to 1894; development of Tsarist autocracy and serfdom; reaction, reform, and rise of the revolutionary movements.

HIST 568 Russia and Soviet Union Since 1894
3 credits
Joint-listed with HIST 468.
The last years of Tsarism; revolutions of 1905 and 1917; development of the Soviet Union under Lenin, Stalin, and their successors.

HIST 582 Japan, 1600 to Present
3 credits
Joint-listed with HIST 482
Western impact on the political, cultural, and economic fabric of Japanese society.

HIST 584 Modern China, 1840s to Present
3 credits
Joint-listed with HIST 484.
Last century of Qing dynasty, 1911 Revolution and Republican experiment, Revolution of 1949, and People's Republic of China.

HIST 585 Chinese Social and Cultural History
3 credits
Joint-listed with HIST 485.
Survey of Chinese culture and traditions during the first millennium. Additional assignment/projects required for graduate credit.

HIST 590 Issues and Methods in History
3 credits
This course introduces graduate students to key methodological, theoretical, and disciplinary standards of history; and the significance of comparative and interdisciplinary approaches to understanding historical developments.

HIST 598 (s) Internship
Credit arranged.

HIST 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

HIST 600 Doctoral Research and Dissertation
Credit arranged.

HYDROLOGY (HYDR)

HYDR 404 (s) Special Topics
Credit arranged.

HYDR 409 Quantitative Hydrogeology
3 credits
Joint-listed with HYDR 509
A rigorous introduction to the description of flow in porous media; the basic equations of potential flow theory as they relate to ground water problems, with application to common engineering problems encountered by hydrogeologists and engineers; dimensional analysis, properties assignment, and heterogeneous systems. For graduate credit additional reading, presentations, and/or written reports of assigned literature required.
Prereq: MATH 275, STAT 251 or STAT 301.

HYDR 412 Environmental Hydrogeology
3 credits
Joint-listed with HYDR 512
Methods of hydrogeologic site characterization for the delineation of environmental problems. For graduate credit, students are required to complete an additional independent research paper.
Prereq: GEOL 309.

HYDR 496 Hydrogeology Senior Thesis
3 credits
Completion of original research and report. Course is taken over two semesters; first semester is graded IP until completion of second semester.
Prereq: GEOL 309 or HYDR 409/HYDR 509 and GEOL 410.

HYDR 499 (s) Directed Study
Credit arranged.

HYDR 500 Master's Research and Thesis
Credit arranged.

HYDR 501 (s) Seminar
Credit arranged
Graded P/F.
Prereq: Permission.

HYDR 502 (s) Directed Study
Credit arranged.

HYDR 503 (s) Workshop
Credit arranged.

HYDR 504 (s) Special Topics
Credit arranged.

HYDR 509 Quantitative Hydrogeology
3 credits
Joint-listed with HYDR 409
A rigorous introduction to the description of flow in porous media; the basic equations of potential flow theory as they relate to ground water problems, with application to common engineering problems encountered by hydrogeologists and engineers; dimensional analysis, properties assignment, and heterogeneous systems. For graduate credit additional reading, presentations, and/or written reports of assigned literature required.
Prereq: MATH 275, STAT 251 or STAT 301.

HYDR 512 Environmental Hydrogeology
3 credits
Joint-listed with HYDR 412
Methods of hydrogeologic site characterization for the delineation of environmental problems. For graduate credit, students are required to complete an additional independent research paper.
Prereq: GEOL 309.

HYDR 576 Fundamentals of Modeling Hydrogeologic Systems
3 credits
Development and application of models representing physical systems, with particular emphasis on ground water flow. Development and solution of the basic equations of potential flow will be covered, along with their assumptions and limitations. Properties assignment, parameter sensitivity, and dimensional analysis will also be discussed. The course will emphasize when modeling is appropriate, how to design a model, and how properties should be selected to achieve meaningful results. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 275 or Permission.

HYDR 598 (s) Internship
Credit arranged.

HYDR 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

INDUSTRIAL TECHNOLOGY (INDT)

INDT 310 Introduction to Industrial Technology
3 credits
This course presents an overview of the careers that comprise the field of industrial technology and the courses and curriculum for the degree. Topical areas include; the concept of technology, overview of materials and manufacturing, safety science, network technology, electricity and electronics, automation and robotics, energy technologies, and nuclear technology. Recommended preparation: completed general education requirements.
Prereq: MATH 160 or MATH 170 .

INDT 311 Problems in Industrial Technology
1 credit
Students will develop a project applying technology to a National Academy of Engineering Challenge Problem. Recommended preparation: completed general education requirements.
Prereq: INDT 310 .

INDT 332 Introduction to Analog and Digital Electronics
4 credits
Introduction to the fundamental laws of electrical engineering, circuit analysis – D.C. and A.C. circuits-R-L and C elements – series and parallel circuits; D.C. and A.C. machines, Transformers, and Electrical measurements. Digital electronics: number system and codes; logic gates; Boolean algebra; ALU; introduction to CMOS.
Prereq: INDT 310 or Permission .

INDT 333 Industrial Electronics and Control Systems
3 credits
Introduction to Control Systems: Fundamentals of programmable logic controllers. Logic concepts, Processing unit, input/output systems, peripheral devices, programming techniques, applications and interfacing. Recommended preparation: completed general education requirements.
Prereq: INDT 332 or Permission .

INDT 350 Introduction to Materials Science
3 credits
Introduction to the fundamentals and applications of materials engineering. Atomic, molecular, and crystalline structures and properties of materials with their relevance to engineering. Topics will include: diffusion, defects, phase diagrams, heat treatment, mechanical behavior, and will cover the different materials classes, i.e., metals, ceramics, polymers, composites, and semiconductors.
Prereq: INDT 310 or Permission.

INDT 353 Manufacturing Systems
3 credits
Introduction to manufacturing processes, mechanical and physical properties of materials, and solidification processes. Metal forming, materials removal processes, property enhancing, Joining and Assembly processes, and surface processing operations. Manufacturing systems, automation, and integrated manufacturing systems. Recommended preparation: completed general education requirements.
Prereq: INDT 350 or Permission .

INDT 362 Behavior Based Safety
3 credits
Principles of paradigm shifts required for total safety, human barriers to safety, the basic principles of behavior-based psychology and behavioral safety analysis and behavior-based interventions.
Prereq: PSYC 101 .

INDT 364 Hazardous Materials
3 credits
Handling, transportation, and storage of hazardous materials; how to protect and suppress fires that occur in hazardous materials. Recommended preparation: completed general education requirements and INDT 310.
Prereq: CHEM 112/CHEM 112L; and MATH 160 or MATH 170.

INDT 400 (s) Seminar
Credit arranged.

INDT 404 (s) Special Topics
Credit arranged.

INDT 405 (s) Professional Development
Credit arranged.

INDT 408 Fire Safety Hazard Analysis
3 credits
Collect and apply fire incident data and analysis. Conduct fire analysis. Conduct fire loss investigation. Identify the components that, alone or in combination, form emergency and standby power systems. Understand the dynamics of heating systems. Identify basic components and hazards associated with 'hot work' and manufacturing processes dealing with proper storage and handling procedures. Identify the fire hazards of grinding processes. Understand proper design, installation, and maintenance of electrical systems and appliances. Identify common types of refrigeration and associated hazards and their corrective actions. Identify the unique hazard of semiconductor manufacturing.
Prereq: Permission .

INDT 409 Fire Suppression Design and Detection
3 credits
Identify the operational characteristics of modern fire alarm systems. Identify the proper applications of automatic fire detectors. Evaluate fire alarm systems, testing and maintenance. Identify the requirements and the benefits of fire alarm systems relating to other systems. Identify and understand the properties, proper use and limitations of non-water systems, halogen and carbon dioxide agents. Identify and understand the water supply system requirements as well as the design criteria for hydraulics for fire protection. Identify the properties and limitations of both dry and wet chemical extinguishing agents. Identify the properties and limitations of various foam extinguishing agents. Identify the properties and proper agents and application techniques for combustible metal fires.
Prereq: Permission .

INDT 410 Loss Control
3 credit
Initiate and coordinate hazard abatement solutions with building managers, plant personnel in providing the corrective actions for life safety and fire protection deficiencies. Use calculations to identify friction loss. Use calculations in determining fire resistive coatings used in buildings. Identify the hazards of explosion prevention and protection. Understand the precautionary need for various types of air-moving equipment. Identify building construction elements for fire protection. Understand the elements of confinement of fire in buildings. Identify and describe the structural damage factors to be evaluated after a fire. Identify fire hazards of construction, alteration and demolition of buildings.
Prereq: Permission .

INDT 411 Fire and Life Safety Management
3 credits
Conduct complex inspection surveys of commercial and residential properties to evaluate physical characteristics of a property and business. Oversee acquisition, installation, operation, maintenance and disposition of building systems. Understand public protection class and municipal and private water systems. Possess knowledge of property fire insurance, building construction and/or field experience in performing fire/property surveys involving detailed analysis. Observe, examine, inspect, gather data and describe all aspects of a property/building and business. Possess knowledge of fire services, environmental hazards, and building construction.

INDT 412 Engineering for Fire and Life Safety
3 credits
Identify fire protection in special occupancies. Identify fire protection in warehouse and storage operations. Identify fire protection of electronic equipment. Understand and apply related NFPA standards and company requirements and standards. Evaluate code, law, and regulation compliance of a facility's operations. Identify safety control systems (PLC controllers, hardwired interlock systems) as it applies to: NFPA 70E, 79, 85 and 86 ANSI/ISA 84.00.01-2003 (IEC 61511) Safety Integrity Levels 1, 2 or 3. Identify principles of human behavior and fire. Identify the chemistry and physics of fire. Identify dynamics of fire growth. Identify challenges to safety in the built environment. Apply fundamentals of safe building design. Identify the local and regional codes and standards for the built environment.

INDT 413 Community Planning and Design for Fire Protection and Management
3 credits
Perform pre-incident planning for industrial and commercial facilities. Identify and understand the operations of fire loss prevention and emergency organizations. Evaluate operations of public emergency operations, fire training and communication systems. Identify the use and function of fire emergency services protective clothing and protective equipment. Identify concepts of egress design. Use calculation methods for egress prediction. Develop and manage emergency preparedness procedures and assure all emergency systems and procedures are tested as planned. Identify the elements of the National Incident Management System (NIMS) in relation to emergencies.
Prereq: Permission .

INDT 415 Impact of Technology on Society
3 credits
In-depth examination of the impact technology has had and will continue to have on society. Recommended preparation: completed general education requirements.
Prereq: INDT 310 or Permission .

INDT 434 Power Generation and Distribution
3 credits
Conventional & Non-Conventional methods – comparison of sources of energy. Growth & future trends in power systems; Hydroelectric, Nuclear, and Gas Turbine power plants – merits & demerits; selection of site. Effect of system voltage on transmission efficiency, circuit breakers, kelvin's Law; radial, ring main systems – different types of DC & AC distributors with concentrated loads. Recommended preparation: completed general education requirements.
Prereq: INDT 332 or Permission .

INDT 435 Network Administration
3 credits
This course provides students with the instruction necessary to install, configure, and troubleshoot a computer network. This course introduces current networking standards, the OSI Model, various protocols and topologies, the interconnections between various hardware components, network operating systems, DNS, DHCP, TCP/ IP, Ethernet, wired and wireless transmission, and security.
Prereq: MATH 160 or MATH 170; and INDT 310 .

INDT 442 Systems Integration
3 credits
This course is designed to provide students with an understanding of Systems Integration (SI) processes, approaches, drivers, tools and techniques required for successful SI, critical success factors, and best practices. The objective of the course is to provide the students an understanding of the technical and business process issues involved in systems integration. Systems integration process is illustrated over the life cycle concept of projects – during design, development, implementation, testing and production. Recommended preparation: completed general education requirements.
Prereq: INDT 310 .

INDT 443 Government Contract Law
3 credits
Contract formation, and contract administration pertaining to government contracts. Recommended preparation: completed general education requirements and INDT 310.

INDT 444 Quality Assurance Organization and Management
3 credits
Industrial management principles applied to effective economic control of quality assurance activities. Recommended preparation: completed general education requirements.
Prereq: INDT 310; and STAT 251 or STAT 301 .

INDT 446 Labor Law
3 credits
Practical legal considerations in employer/employee relationships, including union contracts. Recommended preparation: completed general education requirements and INDT 310.

INDT 448 Project and Program Management
3 credits
This course addresses the project/program life-cycle. It defines projects and programs, and the roles and responsibilities of project and program managers. Students are introduced to the related, but differing, techniques for project/program planning (work structuring, budgeting, scheduling, resource allocation), and execution (monitoring, control, auditing, closure).
Prereq: STAT 251 or STAT 301 .

INDT 453 Computer Integrated and Robotics Manufacturing Technology
3 credits
In-depth examination and implementation of advanced computer aided drafting, 3D solids modeling, computer numerical control, basic and advanced toolpath generation, virtual machining environments, and robotics applications. Enrollment per section limited to lab stations available. Recommended preparation: completed general education requirements.
Prereq: INDT 353 or Permission .

INDT 457 Lean to Green Sustainable Technology
3 credits
Lean production and lean manufacturing refer to the use of systematic methods to reduce costs by eliminating wastes and nonvalue-added activities, while delivering what the customer wants, on time. Even without explicitly targeting environmental outcomes, lean efforts can yield substantial environmental benefits. Recommended preparation: completed general education requirements.
Prereq: INDT 353 or Permission .

INDT 462 Industrial Safety
3 credits
Overview of industrial safety and health in business and industry. Includes Program Organization, Hazard Information, and Program Implementation. Recommended preparation: completed general education requirements.
Prereq: INDT 362 .

INDT 463 Industrial Transportation Safety
3 credits
Principles of safety in all aspects of industrial transportation; roads, railroads, air, water, pipeline.

INDT 464 Human Performance Fundamentals
3 credits
Introduction to the factors that control and influence human performance. Explore the basis of individual and leader behaviors as well as organizational processes and values that either lead to or prevent error. Fundamental knowledge of human and organizational behavior is emphasized so that the manager, supervisor, and worker can better handle error-provoking work situations to prevent human error and work-place events. Recommended preparation: completed general education requirements.
Prereq: INDT 362 .

INDT 465 Construction Safety
3 credits
Major components of construction health and safety, including hazards, law, written programs, implementation, control and behavior.

INDT 466 Human Performance Field Investigation
3 credits
Provides education in the area of participating in an investigation of an incident that has a significant human contribution. Principles of the old view of human error – the problems it holds, the traps it represents, and the temptations that can make one fall into them. The new view of human error in which human error is the starting point for an investigation. Reconstruct the human contribution to system failure and "reverse engineer" the evolving mindset of personnel who were caught up in an event. Investigate the biases and difficulties in understanding past behavior associated with system failure. Recommended preparation: completed general education requirements.
Prereq: INDT 464.

INDT 470 Homeland Security
3 credits
This course will provide students with a basic understanding of terrorism involving Weapons of Mass Destruction (WMD) (e.g. biological, nuclear, incendiary, chemical, radiological, and explosive devices). The history of WMD/Terrorism and how it relates to modern day devices and concepts will be discussed. The students will gain an understanding of International terrorism and homegrown terrorists. Recommended preparation: completed general education requirements.

INDT 472 National Incident Management Systems
3 credits
This course is designed to increase the participants' knowledge and understanding of the inherent flexibility of the Incident Command System to manage major or complex incidents. Utilizing lectures and small group activities, participants will acquire an in-depth knowledge of the National Incident Management System (NIMS), terminology, players, and management philosophy. Participants will also acquire the ability to organize and manage major or complex incidents. The material covered during the course includes command and general staff duties and responsibilities, unified command, major incident management and area command structures. Recommended preparation: completed general education requirements.

INDT 473 Fundamentals of Unmanned Aerial Systems
3 credits
The course introduces students to unmanned aerial systems (UAS) and provides an overview of UAS types, applications, and operation considerations. The general principles of aerodynamics, propulsion, navigation and stability control applied to UAS are studied. The course provides an in-depth coverage of the main components integrated in both civilian and military UAS, such as payloads, ground control systems, communication data links, and launch/recovery systems.
Prereq: General Technical Background .

INDT 474 Mechatronics Systems
3 credits
Mechatronics is a multi-disciplinary engineering discipline representing a synergistic combination of mechanical, electrical, control, and computer engineering, integrated through a design process. The course provides a cross-disciplinary study of mechatronics systems at a theoretical and practical level. The emphasis is on a balanced approach to: (1) theoretical and analytical understanding of the fundamentals of mechatronics system design, and (2) practical implementation of learned concepts. Software and hardware simulation and interfacing is studied and reinforced through a set of assignments, lab exercises, and a project, based on the Lego Mindstorms EV3 kit.
Prereq: INDT 333 or permission .

INDT 484 Industrial Technology Capstone I
3 credits
Gen Ed: Senior Experience
This course is the first of two capstone courses. The students will select and develop a project that applies technology to a problem. Students are encouraged to incorporate service learning into the project and work in teams. Course will have 1 lecture hours and 2, 3 hour labs each week. Recommended preparation: senior standing.
Prereq: INDT 442 and INDT 444 .

INDT 485 Industrial Technology Capstone II
3 credits
This course is second of the two capstone courses. The students will develop their project that applies technology to a problem. Students are encouraged to incorporate service learning into the project and to work in teams. Course will have 1 lecture hours and 2, 3 hour labs each week. Recommended preparation: senior standing.
Prereq: INDT 442 and INDT 444 .

INDT 499 (s) Directed Study
Credit arranged.

INTEGRATED SEMINAR (ISEM)

ISEM 101 (s)
3 credits
An interdisciplinary, thematically based course, intended to introduce students beginning their university experience to a variety of humanities and social science disciplines and perspectives on topics of broad interest; all themes/sections emphasize discussion and frequent student-faculty and student-student interactions; each includes attention to issues of critical thinking, diversity, and methods of inquiry. Open to first year students only.

ISEM 301 (s)
1 credit
Open only to students who have earned at least 26 credits (sophomore status), the Great Issues Seminars are interdisciplinary courses typically linked with an annual signature event of the university (e.g., Bellwood Lecture, Borah Symposium, Runstad Lecture, Jazz Festival) that integrate the university learning outcomes and general education goals with a critical examination of the great issues topic. Attendance at an event may be required. See www.webs.uidaho.edu/core for specific course titles and descriptions.
Prereq: ENGL 102 and Sophomore Standing .

INTERDISCIPLINARY STUDIES (INTR)

INTR 101 (s) Focus on Success
1-3 credits, max 6
Develop strategies to help you meet the demands of college-level course work. Includes goal setting, study skills, learning strategies, time management, effective communication skills. This course will introduce you to University requirements and resources, and help you integrate into the academic and social environment at the UI.

INTR 200 (s) Seminar
Credit arranged.

INTR 201 Major/Career Exploration & Decision Making
1 credits
Students are taken through the career decision-making process. Through career assessments, occupation & industry research, and informational interviews, students will learn about themselves and explore possible careers in order to narrow down their options and make informed major and career decisions.

INTR 203 (s) Workshop
Credit arranged.

INTR 204 (s) Special Topics
Credit arranged.

INTR 210 Life Skills for Student Athletes
2 credits
This course supports the development of a well-balanced lifestyle for student-athletes, encouraging emotional well-being, leadership, personal growth and decision-making skills. Upon completion of the course the student-athlete will: 1. Understand the guidelines and resources available for academic success; 2. Take personal responsibility for actions, behaviors and pursuing goals; 3. Effectively manage your time within the constraints of a busy academic schedule; 4. Consistently demonstrate successful classroom behavior, study habits, and test taking skills; 5. Make informed and educated decisions regarding health issues; 6. Learn to prepare nutritious and inexpensive meals; 7. Appreciate the meaning of diversity and culture; 8. Understand how to manage your personal finances; 9. Choose the correct major and identify possible career choices; and 10. Demonstrate the understanding of a service learning experience.

INTR 298 (s) Internship
Credit arranged.

INTR 299 (s) Directed Study
Credit arranged .

INTR 316 Explore Mentoring & Leadership
3 credits
Cross-listed with PSYC 317 and SOC 316
Through the study of both mentoring as well as leadership, this course will prepare students to become effective mentors, citizens and members of the larger community. The course will cover a broad range of topics including: mentoring skills; leadership language, theory and style; communication and conflict; social justice and multiculturalism; values and ethics; and social change.

INTR 398 (s) Internship
Credit arranged.

INTR 400 (s) Seminar
Credit arranged.

INTR 401 Career and Leadership Development
2 credits
Gen Ed: Senior Experience
Provides students with information, resources and tools to help them explore careers, set goals, and make informed educational and career choices. Students will enhance their leadership skills, explore abilities, interests, and values in preparation to excel in the post-graduation world. A main focus of the class will be identifying and assessing strengths, direct and transferable skills students possess, and how to market and effectively communicate the value such skills bring to an organization, graduate program or employer post-graduation. Senior experience seminar for students in general studies and interdisciplinary studies.
Prereq: Junior standing or higher .

INTR 403 (s) Workshop
Credit arranged.

INTR 404 (s) Special Topics
Credit arranged.

INTR 405 (s) Professional Development
Credit arranged
Joint-listed with INTR 505.

INTR 450 University Interdisciplinary Colloquium
1 credit, max 6
This course meets in conjunction with the Malcolm Renfrew Interdisciplinary Colloquium, a campus-wide speaker series that meets weekly on Tuesdays during the Fall and Spring semesters. The presentations concern various aspects of teaching and research on campus, and are delivered by faculty and staff from across the university. Attendance at the presentations is required, and students are expected to submit their class notes and reaction essays for each presentation at the end of the semester. Graded Pass/Fail.

INTR 454 Honors Thesis
1 credit
This University Honors Program course is designed for honors students who are actively working towards completing an honors thesis by the time they graduate from the university and the honors program with an undergraduate degree. The course is intended to assist students with the process of finding two faculty mentors who will be guiding them through thesis research and writing, completing an honors thesis proposal, learning about time management, finding writing resources, identifying and practicing research presentations, and timely completion and presentation of the honors thesis at the annual Office of Undergraduate Research (OUR) Symposium in April and the "University Honors Program Research and Creative Activity Thesis Forum" in either December or May each year.

INTR 455 Producing The Looking Glass
1 credit
This course offers students in the University Honors Program an opportunity to learn how to product the program's student publication, "The Looking Glass." The one-credit course includes developing or reviewing criteria for submissions, sending out calls for submissions from honors students, hosting submission sessions, reviewing submissions, editing submissions, and editing and publishing the final product, the annual publication "The Looking Glass.".

INTR 489 Honors Program Ambassadors
1 credit, max 8
Student Ambassadors are selected through an application and interview process. Students will learn leadership, communication, networking and public speaking skills. Students will meet in the classroom with the instructor and will be responsible for representing the University Honors Program at various on- and off-campus events and activities.

INTR 491 College of Letters, Arts, and Social Sciences Ambassadors
Credit arranged
Student ambassadors are selected through an application and interview process. Students will learn skills in leadership, communication, networking, public speaking and time management. Students will be responsible for representing the College of Letters, Arts and Social Sciences in various recruiting activities and events.

INTR 492 College of Science Ambassadors
1 credit, max 8
Student ambassadors are selected through an application and interview process. Students will learn skills in leadership, communication, networking, and public speaking. Students will be responsible for representing the College of Science in various recruiting activities and events.
Prereq: Permission .

INTR 496 Pre-Health Peer Mentors
1 credit, max 4
Pre-health peer mentors are selected through an application and interview process. The mentor program will help promote a welcoming and supportive community for pre-health-professions-focused students new to the University of Idaho, while providing mentors the opportunity to further develop the inter- and intra-personal competencies expected of future healthcare professionals. These competencies include collaboration, communication, service orientation, and ethical responsibility to self and others.

INTR 498 (s) Internship
1 credit, max 2
Tutorial services performed by advanced students under faculty supervision.
Prereq: Permission.

INTR 499 (s) Directed Study
Credit arranged.

INTR 500 Master's Research and Thesis
Credit arranged.

INTR 501 (s) Seminar
Credit arranged.

INTR 502 (s) Directed Study
Credit arranged.

INTR 503 (s) Workshop
Credit arranged.

INTR 504 (s) Special Topics
Credit arranged.

INTR 505 (s) Professional Development
Credit arranged
Joint-listed with INTR 405.

INTR 508 Teaching and Learning Strategies for International Teaching Assistants
1 credit
This course is designed to help International Teaching Assistants become better teachers and facilitators of student learning . The course will include mentoring through classroom teaching and observation sessions. Graded Pass/Fail.

INTR 598 (s) Internship
Credit arranged.

INTR 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

INTERIOR ARCHITECTURE AND DESIGN (IAD)

IAD 151 Intro to Interior Design
3 credits
Introduction to interior design theory and process. Explores transdisciplinary design issues and relationships; emphasis areas include basic design theories, vocabulary, and sustainability of the built environment. Attendance at outside events (such as lectures and symposiums) is required.

IAD 152 Interior Design I
3 credits
Study of the relationship of design theories to the interior environment; exploration, through a variety of media, of the elements and principles of design, with emphasis on spatial relationships and color theory. Focus of design problems is residential design and small-scale contract design. Attendance at outside events; some class critique sessions outside of scheduled hours at student expense.
Prereq: IAD 151 or Permission
Coreq: ARCH 154.

IAD 200 (s) Seminar
Credit arranged.

IAD 203 (s) Workshop
Credit arranged.

IAD 204 (s) Special Topics
Credit arranged..

IAD 231 Design Communication
2 credits
Development of Design Communication tools and practices relevant to interior design, including presentation techniques using various materials/methods for communication of interior design processes and solutions, as well as development of interior design branding and portfolios.
Prereq: Admission to Second Year / Sophomore Standing .

IAD 244 Computer Aided Drafting and Modeling
2 credits
Cross-listed with ARCH 244
Introduction to computer-aided drafting and modeling techniques and applications.
Prereq: ARCH 154.

IAD 254 Architectural Design II
4 credits
Cross-listed with ARCH 254.
Basic integration of principles and concepts for architectural design, both interior & exterior. Two 3-hr studios a wk and assigned work.
Prereq: ARCH 253 or Permission
Coreq: ARCH 243.

IAD 281 History of Interiors I
3 credits
Gen Ed: International
Survey of historical interiors and furnishings from antiquity to the industrial revolution.

IAD 282 History of Interiors II
3 credits
Gen Ed: International
Survey of historical interiors and furnishings form the industrial revolution to the present.
Prereq: IAD 281 or Permission.

IAD 299 (s) Directed Study
Credit arranged..

IAD 332 Furniture Design and Construction
4 credits
Theory and application of furniture design and construction emphasizing the continuing development of three-dimensional design skills and attention to physical detail; aspects of structure, ergonomics, and aesthetics are addressed in process of designing and constructing furniture pieces. One and one-half hrs of lec and 3 hrs of lab a wk in class meetings. Recommended Preparation: IAD 281, IAD 282.
Prereq or Coreq: IAD 351 or Permission.

IAD 344 Digital Design Tools for Interior Design
2 credits
Introduction to software programs, with emphasis on Revit, for use in designing environments. Including but not limited to 3-D modeling.
Coreq: IAD 351 or Permission.

IAD 351 Interior Design III
6 credits
Sequence of advanced residential and small scale contract design projects requiring integration of design theories and process in relationship to critical problem solving. Emphasis on formation of interior spaces to correspond to function and flow patterns. Nine hours of studio a week; field trips reqd at student expense; some class jury sessions outside of scheduled hours.
Prereq: IAD 152 and IAD 254 or Permission.

IAD 352 Interior Design IV
6 credits
Sequence of large scale contact and other design problems requiring application of expanded design process including problem identification, analysis, program development, conceptual and design development and solution presentation. Implementation of lighting, codes, systems furniture, and interior specifications in the design process. Nine hours of studio a week; field trips required at student expense; some class jury sessions outside of scheduled hours.
Prereq: IAD 351.

IAD 368 Materials & Specifications
3 credits
In-depth study of interior finishes, materials, and products; emphasis on performance characteristics, manufacturing methods, testing, codes, specifications, and professional liability. Field trips required at student expense.

IAD 400 (s) Seminar
Credit arranged..

IAD 403 (s) Workshop
Credit arranged..

IAD 404 (s) Special Topics
Credit arranged..

IAD 410 Capstone Proposal Development
2 credits
Capstone Studio proposal development requiring systematic approach to the development of project proposal in preparation for IAD 452. 8 week course/2 credit hour course.
Coreq: IAD 451.

IAD 415 Design Management
3 credits
This course aims to provide a foundation of business knowledge that will prepare design students to work in management. This is a lecture and case study based class.
Prereq: Junior standing or higher.

IAD 443 Universal Design
3 credits
Gen Ed: American Diversity
Introduction to and application of universal design and accessible design concepts, principles, products, standards, laws, regulations, and guidelines to the design and adaptation of the built environment. Attendance at outside events (such as lectures, simulations, and completion of a service learning component) is required. One and a half hours lecture and 3 hours arranged. Recommended Preparation: IAD 254 or ARCH 254.

IAD 451 Interior Design V
6 credits
Advanced problems in mixed use contract interior design requiring synthesis of related course work into comprehensive design resolution that communicates design impact on sense of place and place making; projects will seek to refine the design decision making process by requiring in-depth programming, client participation, and development beyond schematic phases, e.g., integration of building systems, lighting design, interdisciplinary investigation, and understanding of cultural/environmental context. Nine hours of studio a week and assigned work; field trips reqd at student expense; some class jury sessions will meet outside of scheduled hours. Recommended Preparation: ID 443.
Prereq: IAD 352.

IAD 452 Interior Design VI
6 credits
Gen Ed: Senior Experience
Capstone studio course featuring advanced applications of design theories and processes focusing on complex design issues, synthesis and implementation of previous course work in appropriate student selected project, from the initial programming through the final complete design documentation and presentation. Nine hrs of studio a wk and assigned work; field trips reqd at student expense; some class jury sessions will meet outside of scheduled hours.
Prereq: IAD 410 and IAD 451.

IAD 498 (s) Internship
Credit arranged..

IAD 499 (s) Directed Study
Credit arranged..

INTERNATIONAL STUDIES (IS)

IS 195 International Studies Freshman Seminar
3 credits
Introductory course recommended of all International Studies majors in their freshman year. Focuses on introducing interdisciplinary training in global, regional, and issue emphases through oral and written presentations. (Spring only)

IS 200 (s) Seminar
Credit arranged.

IS 203 (s) Workshop
Credit arranged.

IS 204 (s) Special Topics
Credit arranged.

IS 225 International Environmental Issues Seminar
3 credits
Gen Ed: International
Cross-listed with ENVS 225.
Designed for individuals who have an interest in understanding environmental issues from a global perspective. The course focuses on various social and physical issues related to the environment and natural resources using human population dynamics as a backdrop. ENVS 101 recommended. (Spring only)

IS 298 (s) Internship
Credit arranged.

IS 299 (s) Directed Study
Credit arranged.

IS 310 The United Nations
3 credits
Overview of principle UN agencies and current UN activities; emphasis on written and oral presentations through resolution and position paper writing, negotiations, and small group discussions. (Fall only)

IS 320 Model United Nations
2 credits
Advanced preparation for IS 310 members selected to attend the National MUN Conference in New York; emphasis on a particular country and region through study of political, social, and economic indicators, policy goals, and bloc negotiations. (Spring only)
Prereq: IS 310.

IS 321 UN and Related Agencies
1 credit
Companion course to IS 320, this course permits students to further hone their knowledge of a particular UN or related agency through a combination of directed study and roundtable discussions.
Coreq: IS 320 .

IS 322 International Environmental Organizations
3 credits
Overview of principle international environmental agencies and their current activities, with an emphasis on the UN Environment Programme and the organizations which oversee major environmental treaties.

IS 323 International Monetary and Trade Organizations
3 credits
Explores the interaction of countries and international economic/financial institutions, with focus on the political questions that arise from said interaction and organizational policies, the effect of and the conditions for cooperation in international trade and finance, and related legal questions from the treaties that govern this type of cooperation. Recommended Preparation: ECON 201 and POLS 237 or IS 310.

IS 325 The Contemporary Muslim World
3 credits
Gen Ed: Social Science, International
Focus on the states in the Organization of the Islamic Conference, with an emphasis on framing the region, social and popular questions, economic issues, and the global stage.

IS 326 Africa Today
3 credits
Gen Ed: Social Science, International
Focus on the states in Africa, with an emphasis on politics, economy and development, culture and society, and current issues.

IS 350 Sports and International Affairs
3 credits
Gen Ed: Social Science, International
Exploration of the relationship between sports and politics, nationalism, economics, society and culture as they play out in the international arena.

IS 370 African Community, Culture, and Music
1-3 credits
Gen Ed: Humanities, International
Focus on regional and/or national communities and cultures in Africa with an emphasis on musical traditions. Experience based including preparation in the US, field work in one or more African countries, and substantive evaluation after return.

IS 384 African Politics
3 credits
Cross-listed with POLS 384
Exploration of the politics of African countries, beginning with the historical roots of colonialism and decolonization, but concentrating on contemporary issues of state building, war and conflict, development, democratization, and international and regional relations.

IS 398 (s) Internship
Credit arranged.

IS 400 (s) Seminar
Credit arranged.

IS 403 (s) Workshop
Credit arranged.

IS 404 (s) Special Topics
Credit arranged.

IS 410 NGOs in the International System
3 credits
A comparative analysis of nongovernmental organization types, functions, strategies, funding mechanisms, accountability, challenges, and collaborations with other international organizations.

IS 441 International Protection of Human Rights
3 credits
Focus on the law and politics of international human rights, examining the various actors involved in the promotion of human rights around the globe, and exploring competing conceptions of human rights, whether human rights are universal, problems of enforcement, and the role of human rights in foreign policy.

IS 485 (s) Martin Scholars
3 credits
The Martin Scholars program considers a topic related to international conflict and the resolution thereof in a broad context, with specific topics mutually selected by a designated faculty member and the director of the Martin Institute. It serves a small group of students each fall term, with additional work carried out over the course of the ensuing spring term while the Martin Scholars produce masters-level research on that year's specific topics.
Prereq: Departmental Permission .

IS 495 International Studies Senior Seminar
3 credits
Gen Ed: Senior Experience
Capstone course required of all International Studies majors in their senior year. Focuses on incorporating interdisciplinary training in global, regional, and issue emphases through oral and written presentations. (Spring only)
Prereq: Senior standing, International Studies major or Permission .

IS 497 Practicum in Instruction
2 credits
Tutoring and/or instructional services performed by advanced students under faculty supervision. (Spring only)
Prereq: IS 310, IS 320, and Permission .

IS 498 (s) Internship
Credit arranged.

IS 499 (s) Directed Study
Credit arranged.

JAPANESE (JAPN)

Vertically-related courses in this subject field are: JAPN 101 - JAPN 102 - JAPN 201 - JAPN 202. A maximum of 16 credits may be earned for vertical credit in any language in the Department of Modern Languages & Cultures.

JAPN 101 Elementary Japanese I
4 credits
Gen Ed: International
Writing system, pronunciation, vocabulary, and functional grammar. Students with Japanese experience who place higher than JAPN 101 on the placement exam may not enroll in JAPN 101, but may earn credit for JAPN 101 by successfully completing a higher vertically-related course. Cooperative: open to WSU degree-seeking students.

JAPN 102 Elementary Japanese II
4 credits
Gen Ed: International
Writing system, pronunciation, vocabulary, and functional grammar. Cooperative: open to WSU degree-seeking students.
Prereq: JAPN 101 or placement exam.

JAPN 107 Beginning Japanese Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the beginning Japanese level. Graded P/F.

JAPN 201 Intermediate Japanese I
4 credits
Gen Ed: International
A beginning intermediate course; review and practice of basic language skills; increased emphasis on reading and free discussion. Cooperative: open to WSU degree-seeking students.
Prereq: JAPN 102 or placement exam.

JAPN 202 Intermediate Japanese II
4 credits
Gen Ed: International
An intermediate course; review and practice of basic language skills; increased emphasis on reading and free discussion. Cooperative: open to WSU degree-seeking students.
Prereq: JAPN 201 or placement exam.

JAPN 204 (s) Special Topics
Credit arranged.

JAPN 205 Kanji
3 credits
Acquisition of Kanji skills, including listening, speaking, reading and writing.
Prereq: JAPN 102 or placement exam .

JAPN 207 Intermediate Japanese Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the intermediate Japanese level. Graded P/F.

JAPN 299 (s) Directed Study
Credit arranged.

JAPN 301 Japanese Reading
3 credits
Gen Ed: International
Emphasis on the development of reading skills at the advanced intermediate level; some emphasis on grammar, vocabulary and kanji character acquisition. For students who have completed four semesters of elementary and intermediate Japanese or have an equivalent background. Recommended Preparation: JAPN 202 or equivalent.

JAPN 303 Japanese Speaking
3 credits
Gen Ed: International
Emphasis on the development of speaking skills at the advanced intermediate level; focus on utilizing honorific, modest, and respect expressions. For students who have completed four semesters of elementary and intermediate Japanese or have an equivalent background. Recommended preparation: JAPN 202 or equivalent.

JAPN 305 Japanese Professional Culture
3 credits
Examines current issues in Japanese culture.
Prereq: JAPN 202 or Permission .

JAPN 404 (s) Special Topics
Credit arranged.

JAPN 498 (s) Internship
Credit arranged.

JAPN 499 (s) Directed Study
Credit arranged.

JOURNALISM/MASS MEDIA (JAMM)

JAMM 100 Media and Society
3 credits
Overview of mass communication: history and structure of media organizations; the political, economic and social context of media; legal and ethical considerations; media literacy; cultural approaches to mass communication research.

JAMM 121 Media Writing
3 credits
Basic principles of writing for print, broadcast and online media; skills in identifying and evaluating credible information. Two 2-hr lec-labs a wk. Recommended Preparation: Ability to type.
Prereq: ENGL 102 with a grade of C or better and JAMM 100 with a grade of C or better
Coreq: JAMM 122.

JAMM 122 Multimedia Storytelling
1 credit
Basic principles of photographic and video/audio storytelling techniques emphasizing practical application for mass media. Students in JAMM 121 must also register for JAMM 122 the same semester.
Prereq: ENGL 102 with a grade of 'C' or better and JAMM 100 with a grade of 'C' or better
Coreq: JAMM 121 .

JAMM 200 (s) Seminar
Credit arranged.

JAMM 203 (s) Workshop
Credit arranged.

JAMM 204 (s) Special Topics
Credit arranged.

JAMM 225 Reporting I
3 credits
Writing news for print, broadcast and online media. Introduction to newsroom structures and processes, news judgment and decision making. Two 2-hr lectures/labs a wk.
Prereq:JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better .

JAMM 231 Introduction to Screenwriting
3 credits
Cross-listed with ENGL 231
Introduction to the elements of screenwriting; students explore narrative techniques through the study of the short film form, using genre, developing characters, and advancing a story by effectively using cinematic language. Recommended Preparation: ENGL 230 .

JAMM 252 Introduction to Integrated Media Campaigns
3 credits
Overview of issues and methods used by public relations and advertising. Requires that participants engage with their peers to discuss readings, theoretical perspectives, obstacles, history, and current events in integrated marketing communication.
Prereq:JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better .

JAMM 265 Principles of Advertising
3 credits
Overview of the role of advertising in American society. Explores the socioeconomic growth and impact of advertising on U.S. consumer culture. Writing assignments include critiques of advertisements and analyses of their intended effects.
Prereq:JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better .

JAMM 267 Introduction to Media Design
3 credits
Foundational principles and theories of visual communication; use of graphics to communicate information and support persuasive appeals; hands-on learning using industry standard graphic applications.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better .

JAMM 275 Introduction to Broadcasting and Digital Media Production
4 credits
Principles of digital audio and video production and writing; concentration on skills such as writing, producing, directing, sound recording and mixing, lighting, camera work, and editing for narrative and non-narrative storytelling. Work with digital and high-definition equipment for field and studio production. Hands-on experience, criticism and revision are emphasized. Two 75-minute lectures and one 2-hr lab per week.
Prereq: JAMM 100 and JAMM 121 and JAMM 122 with grades of 'C' or better, or ENGL 230 with a grade of 'C' or better, or Permission.

JAMM 299 (s) Directed Study
Credit arranged.

JAMM 322 Broadcast News
3 credits
News reporting for radio, television and the Internet, emphasizing writing, editing, producing, and on- air performance skills; analysis of broadcast news practices. Recommended preparation: JAMM 275.
Prereq:JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 225 or JAMM 275; or Permission.

JAMM 323 Sports Reporting
3 credits
Sports reporting for television, radio and the Internet; emphasizes writing, editing, producing, camera work and on-air performance skills. Focus on interviews, team coverage, game highlights. Recommended Preparation: JAMM 322. (Fall only)
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 225 or JAMM 275; or Permission .

JAMM 324 News Editing and Production
3 credits
News selection, evaluation, editing, display, pagination and design for print and online media. Two 2-hr lectures/labs a wk. (Spring only)
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 225 or Permission .

JAMM 325 Publications Editing
3 credits
Introduction to the development, management, editing, design and distribution of print and web publications; focuses on periodicals, such as magazines and student-originated projects.
Prereq:JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better.

JAMM 326 Design for the Media
3 credits
Principles and applications of design tailored to the media professions. Students learn design principles, software programs and critical thinking applicable to the creation of visual content intended for targeted audiences. (Advertising majors should take the required courses JAMM 267 and JAMM 468 instead of JAMM 326, and will not receive additional JAMM elective credit for JAMM 326 if JAMM 267 and JAMM 468 are counting toward their degree.)
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better .

JAMM 327 Reporting II
3 credits
Interviewing, database research, access to public records and meetings, and development of in-depth news story structure. Includes coverage of government, politics and other public issues. Recommended Preparation: PolS 275.
Prereq:JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better; and JAMM 225 or Permission .

JAMM 328 Science Writing
3 credits
Cross-listed with ENGL 318.
Principles and practices of making scientific concepts and work accessible to general audiences through multiple forms of media; also examines the ways in which media coverage of scientific issues shapes public opinion and policy.
Prereq:ENGL 102 and Sophomore Standing .

JAMM 339 Crime and the Media
3 credits
Cross-listed with SOC 339
Critical evaluation of the media portrayals of crime and the criminal justice system; analysis of how the media help to shape public understanding and public policy.

JAMM 340 Cultural Diversity and the Media
3 credits
Gen Ed: American Diversity
An examination of media studies scholarship related to aging, class, disabilities, gender, race and sexual orientation.
Prereq:JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better.

JAMM 341 Mass Media Ethics
3 credits
A critical examination of ethical issues confronting journalists and other media practitioners. Includes moral analysis, argument and decision-making by media organizations. Case studies drawn from journalism, broadcasting, advertising, public relations and digital media.
Prereq:JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better, and Junior Standing, and a Major in the School of Journalism and Mass Media .

JAMM 350 Public Relations Writing and Production
3 credits
Public relations writing, publication and design processes for print, broadcast and online media. Two 2-hr lectures/labs a wk.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 225 and JAMM 252 .

JAMM 352 Event Planning and Management
2 credits
Examination of types and structures of organizations that produce events, with an emphasis on the management of events, including funding, staffing and promotion. Students complete an original management plan for execution.
Prereq: Permission .

JAMM 361 Advertising Creativity
3 credits
Advertising creative process in print, broadcast and online media, including copywriting and production processes and techniques. Recommended preparation: ART 110.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 265.

JAMM 364 Advertising Media Planning
3 credits
Advertising media planning for broadcast, print and online media; includes interpretation of ratings and market data, media strategies and concepts, and specific buying process in each advertising medium.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 265.

JAMM 365 Social Media
3 credits
History, theory, technology, audience impact and strategic uses of social media for advertising, marketing, public relations and journalism purposes. Students critically examine social media uses and employ current technologies to complete hands-on assignments and develop client-based social media strategies.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better .

JAMM 367 Social Media Management and Analytics
3 credits
How to analyze and understand the metric effect social media has on consumer behavior, campaign effectiveness and the return on investment (ROI) of social media in a media plan.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better, and JAMM 265 .

JAMM 370 Digital Audio Production
3 credits
Audio production principles and techniques, with an emphasis on sound design, writing and announcing skills; digital technologies for radio, television, internet, and music recording.
Prereq:JAMM 100 with a grade of 'C' or better and JAMM 121 with a grade of 'C' or better.

JAMM 374 Digital Media Field Production
3 credits
Single-camera field production techniques and aesthetics. Students will write, produce, direct and revise video projects. Includes pre-production planning, aesthetics and post-production realizations.
Prereq: JAMM 275 .

JAMM 378 American Television Genres
3 credits
Historic development of dominant television genres, discussion of characteristics unique to each genre; examination of the cultural context of television programming.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better, or ENGL 230 with a grade of 'C' or better.

JAMM 379 Hollywood Portrayals of Journalists
3 credits
Addresses the evolving relationship between the American people and their media. It examines the conflicting images of journalists in movies and television and discusses the influence of these images on the American public's perception of news gatherers in the 20th and 21st centuries.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better, or ENGL 230 with a grade of 'C' or better.

JAMM 400 (s) Seminar
Credit arranged
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better.

JAMM 403 (s) Workshop
Credit arranged
May be graded P/F.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Permission.

JAMM 404 (s) Special Topics
Credit arranged
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better.

JAMM 405 Professional Development for Secondary Teachers
1-3 credits
Exposure to current developments in mass media, including technology, law and ethics; supervised experience in writing, editing, publication design, video production and Internet publication; work with high school, college students and professional journalists in a workshop setting. (Summer only)
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better .

JAMM 418 Teaching High School Journalism
3 credits
Principles and best practices for teaching high school journalism. Covers evolution of high school journalism, the coaching method, program management, ethics, legal issues and cultural diversity.
Prereq: Permission .

JAMM 422 Advanced Broadcast News
3 credits
Advanced news reporting for radio, television and the Internet, emphasizing writing, editing, producing, and on- air performance skills; analysis of broadcast news judgments and decision making.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 322.

JAMM 425 Feature Article Writing
3 credits
Strategies and approaches for writing and producing human-interest stories for print and online media; introduction to a variety of feature-writing styles, including columns, reviews, and arts and culture coverage. Topics vary.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 225 or Permission .

JAMM 426 Narrative Journalism
3 credits
An examination of the roots and development of American narrative journalism, with an emphasis on contemporary examples and their location in a digital world. Includes critical analysis of narrative structure, sourcing, audio/visual storytelling techniques and audience reception.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Junior standing or above .

JAMM 440 Critical Issues in Mass Media
3 credits
Examination of critical approaches to mass media, including interdisciplinary interpretations of media forms and content. Addresses how new media technologies are changing how media users acquire, distribute and use information. Analyzes media impact on American culture from a variety of critical perspectives.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better .

JAMM 443 Media Management and Economics
3 credits
Management principles as they apply to mass media; emphasis on personnel management, budgeting, programming, sales, marketing and promotion, legal constraints, new technologies, and strategic planning; study of media ownership.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better.

JAMM 444 Mass Media and Public Opinion
3 credits
Role of media in the formation of public opinion; overview of survey methodology and interpretation.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better.

JAMM 445 History of Mass Media
3 credits
Gen Ed: American Diversity
Develops core historical understanding of significant social, political, economic, and technological developments in the mass media. Focuses primarily on developments and trends in the United States between 1900 and the present. Topics include the media as independent witnesses to human events, the role of audiences, contributions made by underrepresented groups and the importance of a free press to democracy.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better, or ENGL 230 with a grade of 'C' or better.

JAMM 446 Women in the Media
3 credits
Examines the spaces that women occupy in the media, both in front of and behind the camera. Focuses on feminist critiques of the media and issues of representation in a variety of mediums and topics (film, television, print, news, advertising).
Prereq: JAMM 100 with a grade of 'C' or better and JAMM 121 with a grade of 'C' or better and JAMM 122 with a grade of 'C' or better.

JAMM 447 Screenwriting
3 credits
Cross-listed with ENGL 447 and THE 447
Introduction to Study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.
Prereq: ENGL 231 or JAMM 231; Permission.

JAMM 448 Law of Mass Media
3 credits
Gen Ed: Senior Experience
An examination of the legal framework governing the gathering, preparation, and dissemination of information, advertising and entertainment in the United States and globally. Topics include First Amendment, defamation, invasion of privacy, intellectual property, copyright, access to governmental proceedings and records, and regulation of broadcasting, satellite, and cable television.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Senior standing and a major in the School of Journalism and Mass Media .

JAMM 452 Public Relations Campaign Design
3 credits
Examination of public relations programs; practice in developing and executing campaigns with emphasis on problem/issue identification, design of campaign elements, presentations skills and equipment.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 350.

JAMM 456 Nonprofit Fundraising
3 credits
Cross-listed with COMM 456
Explores theory and practice of fundraising for nonprofit groups. Surveys public campaigns and communication strategies, fundraising methods, ethics of fundraising, and fundraising leadership/management. Students will develop methods of evaluation for fundraising, and do so by case studies and preparation for fundraising campaigns.

JAMM 458 Public Relations Research and Case Studies
3 credits
Basic research techniques used by the public relations practitioners, including philosophy and ethics of research, content analysis, focus groups and surveys. Analysis of public relations case studies and reasons for their success or failure.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 252 .

JAMM 466 Media Campaign Strategy
3 credits
Advanced strategies in creative approaches and media usage for Public Relations and Advertising; focuses on the development of a complete campaign for a client.
Prereq: JAMM 350 or JAMM 367 and senior standing.

JAMM 468 Advanced Media Design
3 credits
Advanced principles and theories of visual communication across multiple channels; working in creative teams; presenting original concepts, copywriting, design and layout; emphasis on finished portfolios.
Prereq: JAMM 265.

JAMM 469 Advertising Competition Team
3 credits, max 6
This course provides students with an opportunity to participate in the annual National Student Advertising Competition (NSAC) sponsored by the American Advertising Federation, as well as other student competitions in advertising or integrated marketing communication.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Junior/Senior standing and Permission .

JAMM 472 Photojournalism
1 credit
In a workshop environment, students learn techniques for creating documentary still images and gain experience shooting and editing digitally. Criticism, revision, troubleshooting and journalistic ethics are emphasized.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Instructor Permission .

JAMM 473 Lighting for Digital Media Production
1 credit
In a workshop environment, students learn various lighting styles and techniques through hands-on experience, practical application and analysis. Students will create digital media images with natural and artificial light sources. Criticism, revision, problem solving and troubleshooting are emphasized.
Prereq: JAMM 275 and Instructor Permission .

JAMM 474 Video Editing
1 credit
Exploration of post-production processes, roles, aesthetics, and techniques. Students learn to effectively manipulate video and audio into creative and cohesive works.
Prereq: JAMM 275 and Instructor Permission .

JAMM 475 Advanced Digital Media Production
3 credits
Advanced production and content development for short narrative cinema. Emphasis on story development and pre-production planning. Projects will screen publicly at the annual student digital media festival.
Prereq: Either JAMM 275 and JAMM 374; or JAMM 275 and JAMM 375; or Permission .

JAMM 476 Advanced Digital Media Production II
3 credits
Gen Ed: Senior Experience
Continues advanced production and content development for short narrative cinema. Emphasis on schedule adherence and aesthetic realization. Projects will screen publicly at the annual student digital media festival.
Prereq: JAMM 475 .

JAMM 477 Documentary Film
3 credits
Cross-listed with ENGL 477.
An examination of the historical development of nonfiction film and television. Study of documentary style and form, a consideration of social issues raised by documentary and a survey of significant practitioners and theorists of documentary film and television. Recommended preparation: ENGL 230.
Prereq:ENGL 102 and sophomore standing .

JAMM 478 Broadcast/Cable/Web Programming
3 credits
Program development, theory, and scheduling, with emphasis on the regulations and strategies involved in radio, television, cable, and web programming at both the national and local levels.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better.

JAMM 490 Global Media
3 credits
Gen Ed: International
Technologies and concepts of international media; models of international content flow; cross-cultural mass media.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better.

JAMM 491 Multimedia Storytelling Abroad
3 credits
Covers foundational media skills in photography, audio, video, social media, and content management, using an organized international travel experience as the inspiration for each student's media production.
Prereq: Permission .

JAMM 497 Practicum in Teaching
1-3 credits, max 3
Supervised experience in assisting in teaching of JAMM courses.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Upper-class standing and Permission .

JAMM 498 (s) Internship
0-3 credits, max 6
Supervised experience in professional media outlet, non-profit organization, government agency, or educational institution. Graded P/F.
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Junior Standing; and JAMM 225, JAMM 252, JAMM 265, or JAMM 275; or Permission of Instructor .

JAMM 499 (s) Directed Study
Credit arranged, max 6
Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better.

LANDSCAPE ARCHITECTURE (LARC)

LARC 151 Introduction to the Built Environment
3 credits
May not be taken for credit after ARCH 151. Introduction to the complexities and wonders of the built environment, and the role of the humanities in successful designs. From the regional landscapes to urban design and architecture, to the intimacy of interiors and dwellings, to place making and space making, student perspectives are broadened on how the built environment is shaped by and contributes to an evolving human story. The built environment is also examined as a product of a multitude of forces that include: place, climate, conservation, culture, economics, beliefs, and aspirations for well-being.

LARC 154 Landscape Architecture Representation and Media 1
3 credits
Drawing and graphic techniques traditional to the practice of landscape architecture and design thinking; emphasis on conceptual and analytical graphics, plan section/elevation, perspective illustration and color rendering; introduction to digital technology presentation tools. (Spring only)

LARC 200 (s) Seminar
Credit arranged.

LARC 203 (s) Workshop
Credit arranged.

LARC 204 (s) Special Topics
Credit arranged.

LARC 210 Landscape Architecture Representation and Media 2
3 credits
Exploration of the digital technology tools used by design professionals throughout the design process; emphasis on digital tools that assist with the conceptualization and implementation of site design with an introduction to related landscape architecture specific tools. Open to landscape architecture majors only; non-majors by permission as space permits. (Fall only)
Prereq: LARC 154 and major in Landscape Architecture; non-majors by permission as space permits .

LARC 251 Introduction to Principles of Site Design
3 credits
An overview of site analysis, design, and planning principles addressing the theoretical foundations, emerging cultural practices as well as the technical and functional standards for sustainable landscape architectural site design. Includes a lab section for discussion, critique and presentation of additional technical issues and site-related design projects; field trips and special sessions may be required. (Fall only)

LARC 254 Origins of Landscape Form
2 credits
An overview of the principles and theory of form generation demonstrating the relationship between world-view, historic epoch, science and technology and the creation of form relevant to landscape architecture and other design professions. Summer reading list provided. (Spring only)
Prereq: ART 121 .

LARC 288 Plant Materials & Design 1
3 credits
Joint-listed with LARC 488.
Plant identification and selection; the sustainable use of plant materials in relation to soils, topography, and climate; introduction to the principles in relation to planting design. Selected field trips at student expense. (Fall only)

LARC 289 Plant Materials & Design 2
3 credits
Joint-listed with LARC 489.
Continuation of plant material identification with emphasis on planting design at different scales of the landscape. Exploration of sustainable principles and practices of planting design. Two lec and 4 hrs of lab a wk; selected field trips at student expense. (Spring only)
Prereq: LARC 288 .

LARC 298 (s) Internship
Credit arranged.

LARC 299 (s) Directed Study
Credit arranged.

LARC 310 Landscape Architecture Representation and Media 3
3 credits
Joint-listed with LARC 510
Advanced digital technology tools used by landscape architects throughout the design process; emphasis on digital modeling tools that assist with the conceptualization and development of site design and design detail. Further exploration of digital media to assist with the communication and presentation of design process and concepts. Open to landscape architecture majors only. Additional project required for graduate credit. (Fall only)
Prereq: LARC 154, LARC 210, and major in Landscape Architecture; non-majors by permission as space permits .

LARC 340 Grading, Drainage, and Stormwater Management
4 credits
Joint-listed with LARC 440.
Site grading, drainage and stormwater management design with a focus on siting building elevations and grading open space, green infrastructure, roads, parking, walkways, paved public spaces, cut and fill and horizontal road layout. Sustainable storm water design, grading of swales, calculating runoff and the sizing conveyance and detention basins. Recommended Preparation: MATH 143.
Prereq: Landscape Architecture major, Landscape Architecture minor, or Permission .

LARC 341 Construction Materials, Detailing, and Documentation
4 credits
Joint-listed with LARC 441
Introduction to designing and detailing materials in the landscape. Examines the content and purpose of construction documents, the construction sequence, and properties of common landscape construction materials as they relate to aesthetics, the articulation of place, durability, and performance in outdoor environments. Focus on building a unified set of construction details and document set. Sustainable approaches, practices, and research reports support the work in detailing the materials and completion of the construction document package. Recommended Preparation: LARC 210, LARC 340.
Prereq: Landscape Architecture major, minor or permission .

LARC 353 Landscape Architecture Studio 1
3 credits
Joint-listed with LARC 450.
Studies and applications in landscape architecture site design process at the small-site scale with an emphasis on critical thinking within the bioregional context; includes readings, lectures and field trips. Course offered in the first half of fall semester. Additional program required for graduate credit. Recommended Preparation: ART 100, ART 121, LARC 151, and LARC 154. (Fall only)
Prereq: ENGL 102, LARC 251, LARC 254, LARC 288, and LARC 289.

LARC 355 Landscape Architecture Studio 2
3 credits
Joint-listed with LARC 452.
Continued application and exploration of design process with a focus on the significance of site inventory and analysis, design programming and the creation of a conceptual framework to guide the design process. Course offered in the second half of fall semester. (Fall only)
Prereq: LARC 251, LARC 254, LARC 288, and LARC 289
Coreq: LARC 353 or Permission .

LARC 358 Professional Office Practice in Landscape Architecture
2 credits
Office organization, fees, contracts, bonding, bidding specifications, insurance, and relationships with subcontractors. Cooperative: open to WSU degree-seeking students. (Fall only)

LARC 363 Landscape Architecture Studio 3
3 credits
Joint-listed with LARC 454.
Exploration of design principles, process, conceptualization, spatial understanding, and craft via narrative; within a cultural, social, and environmental context; and application to creative thinking and decision-making required of site-specific projects. Required field trips and attendance at outside events (lectures, symposiums, films). Course offered first half of semester. Additional project required for graduate credit. Recommended Preparation: LARC 154, LARC 210, and LARC 288 (Spring only)
Prereq: LARC 355 or Permission
Coreq: LARC 365 or Permission .

LARC 364 Summer Study Abroad Design Studio
6 credits
Joint-listed with LARC 564.
Intermediate site scale planning and design with an emphasis on bioregional context, sustainable development and the cultural landscape as influencing site design factors. A summer abroad studio that may be substituted for LARC 353 and LARC 355, or LARC 363 and LARC 365. Recommended Preparation: ART 110 and ART 121. (Summer only)
Prereq: LARC 151, LARC 154, LARC 210 and LARC 288
Coreq: LARC 382 and LARC 390 .

LARC 365 Landscape Architecture Studio 4
3 credits
Joint-listed with LARC 462.
Further integration and application of design process explored in LARC 363 via outreach project(s). Focus on sustainable design development. Required field trips and attendance at outside events (lectures, symposiums, films). Course offered second half of semester. Recommended Preparation: LARC 154, LARC 210, and LARC 288. (Spring only)
Prereq: LARC 355 or Permission
Coreq: LARC 363 or Permission .

LARC 380 Water Conservation Technologies
3 credits
Sustainable irrigation best practices; principles of water conservation and water harvesting in landscape architecture site design with the production of a number of drawings and projects at different scales. Recommended Preparation: LARC 210. (Spring only)

LARC 382 Landscape, Language and Culture
2 credits
Students study the Italian language, utilizing the regional, historic landscape of southern Piedmont and the markets, museums, and cultural events of Cremolino, Ovada and Aqui Termi as a resource for enhancing language skills. (Summer only)
Coreq: LARC 364 and LARC 390.

LARC 389 History of Landscape Architecture
3 credits
An overview of the history of landscape design with a focus on pre-Egyptian civilization through Ancient Greece and Rome, the Middle Ages, the Renaissance, the influence of Asian culture, the birth of landscape architecture, modernism, and a contemporary focus of practice. Cooperative: open to WSU degree-seeking students. (Spring only)

LARC 390 Italian Hill Towns and Urban Centers
3 credits
Gen Ed: International
Joint-listed with LARC 491
A summer lecture and field experience course exploring the historical foundations of community and urban pattern utilizing Italian hill towns and urban centers as a resource. Students study the organic and formal relationships between landscape and human settlement as well as the relationship between urban form and political and historical context. Recommended Preparation: ART 100, ART 111, and LARC 389. (Summer only)
Prereq: LARC 154
Coreq: LARC 364 and LARC 382 .

LARC 395 GIS Applications in Land Planning 1
3 credits
A primer on geographic information systems (GIS) applied to landscape architecture and land planning with lab exercises exploring the site suitability analysis process at the landscape level. Three hrs of lec-lab a wk. (Fall only)
Prereq: LARC 210 or Permission .

LARC 400 (s) Seminar
Credit arranged.

LARC 403 (s) Workshop
Credit arranged.

LARC 404 (s) Special Topics
Credit arranged.

LARC 440 Grading, Drainage, and Stormwater Management
4 credits
Joint-listed with LARC 340.
Site grading, drainage and stormwater management design with a focus on siting building elevations and grading open space, green infrastructure, roads, parking, walkways, paved public spaces, cut and fill and horizontal road layout. Sustainable storm water design, grading of swales, calculating runoff and the sizing conveyance and detention basins. Recommended Preparation: MATH 143.
Prereq: Landscape Architecture major, Landscape Architecture minor, or Permission .

LARC 441 Construction Materials, Detailing, and Documentation
4 credits
Joint-listed with LARC 341
Introduction to designing and detailing materials in the landscape. Examines the content and purpose of construction documents, the construction sequence, and properties of common landscape construction materials as they relate to aesthetics, the articulation of place, durability, and performance in outdoor environments. Focus on building a unified set of construction details and document set. Sustainable approaches, practices, and research reports support the work in detailing the materials and completion of the construction document package. Recommended Preparation: LARC 210, LARC 340.
Prereq: Landscape Architecture major, minor or permission .

LARC 450 Landscape Architecture Studio I
3 credits
Joint-listed with LARC 353.
Studies and applications in landscape architecture site design process at the small-site scale with an emphasis on critical thinking within the bioregional context; includes readings, lectures and field trips. Course offered in the first half of fall semester. Additional program required for graduate credit. Recommended Preparation: ART 100, ART 121, LARC 151, and LARC 154. (Fall only)
Prereq: ENGL 102, LARC 251, LARC 254, LARC 288, and LARC 289.

LARC 452 Landscape Architecture Studio 2
3 credits
Joint-listed with LARC 355.
Continued application and exploration of design process with a focus on the significance of site inventory and analysis, design programming and the creation of a conceptual framework to guide the design process. Course offered in the second half of fall semester. (Fall only)
Prereq: LARC 251, LARC 254, LARC 288, and LARC 289
Coreq: LARC 353 or Permission .

LARC 453 Landscape Architecture Studio 5
3 credits
Intermediate scale site planning through integrated studio engagement at the community and urban scale of landscape architecture with a focus on the integration of open space systems in community design. Opportunity to collaborate with students and faculty from allied professional programs. Course offered first half of fall semester. Recommended Preparation: LARC 288, LARC 289, and LARC 389. (Fall only)
Prereq: LARC 365 or Permission
Coreq: LARC 455 or Permission .

LARC 454 Landscape Architecture Studio 3
3 credits
Joint-listed with LARC 363.
Exploration of design principles, process, conceptualization, spatial understanding, and craft via narrative; within a cultural, social, and environmental context; and application to creative thinking and decision-making required of site-specific projects. Required field trips and attendance at outside events (lectures, symposiums, films). Course offered first half of semester. Additional project required for graduate credit. Recommended Preparation: LARC 154, LARC 210, and LARC 288 (Spring only)
Prereq: LARC 355 or Permission
Coreq: LARC 365 or Permission .

LARC 455 Landscape Architecture Studio 6
3 credits
Continued emphasis on community design with a focus on master planning and design development that explores different models of human settlement and patterns of cultural, environmental and social elements. Selected field trips at student expense. Course offered second half of fall semester. Additional project required for graduate credit. Recommended Preparation: LARC 288, LARC 289, and LARC 389. (Fall only)
Coreq: LARC 453 or Permission .

LARC 462 Landscape Architecture Studio 4
3 credits
Joint-listed with LARC 365.
Further integration and application of design process explored in LARC 363 via outreach project(s). Focus on sustainable design development. Required field trips and attendance at outside events (lectures, symposiums, films). Course offered second half of semester. Recommended Preparation: LARC 154, LARC 210, and LARC 288. (Spring only)
Prereq: LARC 355 or Permission
Coreq: LARC 363 or Permission.

LARC 463 Landscape Architecture Studio 7
3 credits
Intermediate scale sustainable land planning and design for the urban and rural environment with a focus on the integration of wetland ecology planning, storm water management and wildlife habitat. Course offered first half of spring semester. Selected field trips at student expense. Recommended Preparation: LARC 288 and LARC 289. (Spring only)
Prereq: LARC 395, LARC 455, or Permission
Coreq: LARC 465 or Permission .

LARC 465 Landscape Architecture Studio 8
3 credits
Intermediate scale land planning and design that emphasizes sustainable development with a focus on landscape restoration and regeneration, visual analysis of the landscape matrix using GIS digital technologies and the use of indigenous plant materials for restoration and rehabilitation. Required Field Trip at student expense. Course offered second half of spring semester. Additional project required for graduate credit. Recommended Preparation: LARC 288 and LARC 289. (Spring only)
Prereq or **Coreq:** LARC 463, or Permission .

LARC 480 The Resilient Landscape
3 credits
Gen Ed: Senior Experience
Cross-listed with FOR 490.
A capstone course addressing the concept of trade-offs in coupled social ecological technological systems, where landscapes and the communities they support are adaptive and evolving but the ideal is rarely attainable. This is a reading, critical thinking and discussion course with assessment based on class participation in a term project, problem solving, verbal and written communication, collegiality and collaboration (Spring only).
Prereq: ENGL 102 and Junior standing .

LARC 481 Urban Systems in Ecology
3 credits
This course is designed to introduce upper division students of Landscape Architecture and other related disciplines to the principles, theories and processes of urbanism with a focus on sustainability and the integration of natural systems both as metaphor and physical design process.

LARC 488 Plant Materials and Design 1
3 credits
Joint-listed with LARC 288.
Plant identification and selection; the sustainable use of plant materials in relation to soils, topography, and climate; introduction to the principles in relation to planting design. Selected field trips at student expense. (Fall only)

LARC 489 Plant Materials and Design 2
3 credits
Joint-listed with LARC 289.
Continuation of plant material identification with emphasis on planting design at different scales of the landscape. Exploration of sustainable principles and practices of planting design. Two lec and 4 hrs of lab a wk; selected field trips at student expense. (Spring only)
Prereq: LARC 288 .

LARC 491 Italian Hill Towns and Urban Centers
3 credits
Gen Ed: International
Joint-listed with LARC 390
A summer lecture and field experience course exploring the historical foundations of community and urban pattern utilizing Italian hill towns and urban centers as a resource. Students study the organic and formal relationships between landscape and human settlement as well as the relationship between urban form and political and historical context. Recommended Preparation: ART 100, ART 111, and LARC 389. (Summer only)
Prereq: LARC 154
Coreq: LARC 364 and LARC 382 .

LARC 495 GIS Applications in Land Planning 2
3 credits
Advanced methods for regional-scale landscape planning using geographic information system (GIS) technology to apply ecological principles and land use analysis and planning. Required of Landscape Architecture majors with a land planning focus.
Prereq: LARC 395 or GEOG 385 or Permission .

LARC 497 Teaching Assistant, Undergraduate
3 credits, max 6
Teaching assistant services performed by advanced undergraduate students with faculty supervision. By permission only.

LARC 498 (s) Internship
Credit arranged.

LARC 499 (s) Directed Study
Credit arranged.

LARC 500 Master's Research and Thesis
Credit arranged.

LARC 501 (s) Seminar
Credit arranged.

LARC 502 (s) Directed Study
Credit arranged.

LARC 503 (s) Workshop
Credit arranged.

LARC 504 (s) Special Topics
Credit arranged.

LARC 520 Regional and Community Design
3 credits
This course examines contemporary issues of urban and regional planning and design through focus on a particular project, generally in partnership with a local community or agency. It complements the integrated fall studio (LARC 554), utilizing thematic readings, case studies, and GIS-based geodesign methods applied to urban and regional design and planning. Particular emphasis is placed on: theory and methods in community design and planning; analytical methods and modeling; case study method in design; and data-driven design.
Prereq: Admission to M. Arch., M.L.A. or M.S. Bioregional Planning program.

LARC 548 Community Design Studio for Non-majors
3 credits
This studio is an introductory landscape planning and urban design studio for students in the Urban Design Certificate program that are not in the professional M. Arch. or MLA programs. Students will work with students in the LARC 554 studio on urban design problems of regional and district scales. This course emphasizes understanding and analyzing regional human and natural systems within the context of urban development and landscape change. Students do not need a background in design to participate in the studio. This course may meet with LARC 554.
Prereq: Graduate standing or permission .

LARC 549 Site Integration Studio
3 credits
Graduate landscape architecture students work with graduate architecture students in the ARCH 553 Comprehensive building design studio to provide disciplinary expertise for site context, planning and design. The collaborative process emphasizes and mirrors interdisciplinary design processes that occur in a professional practice setting.

LARC 554 Landscape Architecture Graduate Studio 1
6 credits
The professional landscape architecture comprehensive studio with options to study on campus or elsewhere in collaboration with students from allied professions. Attendance at outside events, lectures, symposiums, films may be required. (Fall only)
Prereq: Graduate standing, LARC 465; or Permission .

LARC 555 Master's Project Preparation
2 credits
This course guides students through the process of identifying a specific project, and developing a proposal, scope and timeline for their Masters Project. Students will prepare a research report to support their Masters Project, utilizing literature review and case study research methods. Progress is reviewed in weekly peer presentations, giving students practice in developing professional level graphic and verbal presentations.

LARC 556 Landscape Architecture Graduate Studio 2
6 credits
The professional landscape architecture comprehensive studio with options to study on campus or elsewhere in collaboration with students from allied professions. Attendance at outside events, lectures, symposiums, films may be required. (Spring only)
Prereq: Graduate standing, LARC 465, and LARC 554; or Permission .

LARC 558 Landscape Architecture Graduate Studio 3
6 credits
Graduate final project with faculty advisor.
Prereq: Graduate standing and LARC 556; or Permission .

LARC 562 Landscape Architecture Graduate Studio 4
6 credits
Graduate final project with faculty advisor.
Prereq: Graduate standing and LARC 558; or Permission .

LARC 564 Summer Study Abroad Design Studio
6 credits
Joint-listed with LARC 364.
Intermediate site scale planning and design with an emphasis on bioregional context, sustainable development and the cultural landscape as influencing site design factors. A summer abroad studio that may be substituted for LARC 353 and LARC 355, or LARC 363 and LARC 365. Recommended Preparation: ART 110 and ART 121. (Summer only)
Prereq: LARC 151, LARC 154, LARC 210 and LARC 288
Coreq: LARC 382 and LARC 390 .

LARC 597 Teaching Assistant, Graduate
3 credits, max 6
Teaching assistant services performed by advanced graduate students with faculty supervision. By permission only.

LARC 598 (s) Internship
Credit arranged.

LARC 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Graduate standing and Permission.

LATIN AMERICAN STUDIES (LAS)

LAS 200 (s) Seminar
Credit arranged.

LAS 203 (s) Workshop
Credit arranged.

LAS 204 (s) Special Topics
Credit arranged.

LAS 299 (s) Directed Study
Credit arranged.

LAS 306 Culture and Institutions of Latin America
3 credits
Gen Ed: American Diversity, International
Cross-Listed with SPAN 306
Prereq: SPAN 302 or Permission.

LAS 315 Comparative African-American Cultures
3 credits
Gen Ed: American Diversity, International
Cross-listed with HIST 315.
An overview of African American history in the U.S. from the late 19th century to the present; comparisons with the experience of African Americans in other parts of the Americas; study of important personalities and historical forces that have influenced African Americans and the societies in which they live.

LAS 391 Hispanic Film
3 credits
Gen Ed: Humanities, International
Cross-listed with FLEN 391
Open to all students. A maximum of 3 cr in FLEN 391 and FLEN 394 may be counted toward a major in Spanish. Genre, structure, and style of representative fiction and nonfiction films of Spain and Latin America.

LAS 394 Latin American Literature in Translation
3 credits
Gen Ed: Humanities, International
Cross-listed with FLEN 394
A maximum of 3 cr in LAS 391 and LAS 394 may be counted toward a major in Spanish. Major Spanish-language authors in English translation; knowledge of Spanish is not required. (Alt/yrs)

LAS 400 (s) Seminar
Credit arranged.

LAS 403 (s) Workshop
Credit arranged.

LAS 404 (s) Special Topics
Credit arranged.

LAS 409 Modern Latin American Society
3 credits
Gen Ed: International
Cross-listed with SPAN 409
Analysis of contemporary issues in Latin American society such as gender, race, environment, and immigration from a variety of cultural perspectives (film, newspapers, literature, etc.).
Prereq: SPAN 306 or LAS 306.

LAS 413 Span Amer Short Fiction
3 credits
Gen Ed: International
Cross-listed with SPAN 413
The short story in 19th- and 20th-century Spanish America.
Prereq: SPAN 302 .

LAS 422 Mexican Culture through Cinema
3 credits
Gen Ed: International
Cross-listed with SPAN 422
Examines how fictional representations of Mexico are driven by specific historical, political, economic, and cultural forces. Students will also reflect on the ways in which films and literature can inform our knowledge of race, gender and socio-economic relations and how these representations of Mexican culture through film have changed over time.
Prereq or Coreq: SPAN 306 or LAS 306.

LAS 424 Human Rights and Hispanic Cinema
3 credits
Cross-listed with SPAN 424
Examines how Hispanic film represents and grapples with the question of human rights.
Prereq or coreq: SPAN 305.

LAS 438 Modern Mexico and the Americas
3 credits
Gen Ed: International
Cross-listed with HIST 438.
Survey and analysis of political, economic, social, and cultural aspects from independence to present; emphasis on Iberian and Amerindian legacies, economic development, relations with U.S., and social revolution of 1910-1920.

LAS 439 Modern Latin America
3 credits
Gen Ed: International
Cross-listed with HIST 439.
Political, economic, social, and cultural development; search for stability; growth of nationalism.

LAS 441 Slavery and Freedom in the Americas
3 credits
Gen Ed: International
Cross-listed with HIST 441.
Analysis of the way in which African slavery became the predominant labor force in the Americas from 16th century to 19th century. Emphasis on slave resistance and the international abolitionist movement. (1760s to 1888).

LAS 447 International Development Economics
3 credits
Gen Ed: International
Same as AGEC 447 and ECON 447. Characteristics of development; historical perspective; macroeconomic theories and policies: models of growth, poverty, inequality, trade, aid and debt; microeconomic theories and policy: health, nutrition and education, agriculture, rural markets for land, labor and credit, and corruption
Prereq: ECON 201 and ECON 202, or ECON 272, or Permission.

LAS 462 Human Issues in International Development
3 credits
Gen Ed: Social Science, International
Cross-listed with ANTH 462
Course content includes the historical and political contexts that shape development, development theories and approaches, along with the global challenges of poverty, social inequalities, and environment. Culture as an important consideration in development is emphasized. Additional projects/assignments reqd for grad cr. (Alt/yrs)

LAS 499 (s) Directed Study
Credit arranged.

LAW (LAW)

LAW 404 (s) Special Topics
Credit arranged.

LAW 805 Civil Procedure & Intro to Law
2 credits
Overview of U.S. legal systems, providing basics on civil litigation and legal principles. Covers litigation topics including pleadings, pretrial management, discovery, summary judgment, trial, post-trial motions, judgment, personal jurisdiction, subject matter jurisdiction and related topics with a focus on the Federal Rules of Civil Procedure.

LAW 806 Civil Procedure II
3 credits
Continuation of LAW 805 on the process and principles of civil litigation in the U.S.
Prereq: LAW 805 .

LAW 807 Property
4 credits
Future interests, landlord and tenant, bailment, easements, covenants respecting the use and enjoyment of land, rights incident to land ownership and fixtures, adverse possession, gifts of personal property, conveyance of land, recording acts, land title assurance, and public control of land use.

LAW 809 Torts
4 credits
The common law providing private redress for injuries primarily to person or property. The course examines the three basic theories of tort liability: intent, negligence, and strict liability.

LAW 812 Criminal Law
3 credits
The sources and purposes of the criminal law; the meaning of criminal responsibility, the elements of crimes, and the administration of criminal justice.

LAW 813 Contracts
2 credits
Basic elements of private, consensual agreements enforced by law under common law and UCC Article 2: formation, principles of bargain or reliance, methods to police the bargain, interpretation, performance/breach and remedies for breach, defenses to liability, and the rights and liabilities of third parties upon assignment and delegation.

LAW 814 Contracts II
3 credits
Continuation of LAW 813 on the basic elements of private, consensual agreements enforced by law under common law and UCC Article 2.
Prereq: LAW 813.

LAW 815 Legal Writing and Analysis
0 or 5 credits, max 5)
Year-long course. Course focusing on written legal analysis in the context of writing predictive and persuasive legal memoranda, along with an introduction to oral advocacy.

LAW 816 Constitutional Law I
3 credits
An examination of the institution of judicial review and of the constitutional divisions of government power in the United States; the principles of separation of powers and federalism; and the constitutional protection of certain individual rights and liberties, particularly under the 14th Amendment.

LAW 817 Academic Skills Lab I
1 credit
Fundamental skills instruction designed to develop the legal analysis and writing skills needed to perform well in law school. Topics include critical reading, case briefing, course outlining, issue spotting, exam outlining, and exam writing. Graded pass/fail.

LAW 818 Academic Skills Lab II
2 credits
Intensive instruction focused on enhancing students' skills by written and oral exercises in case reading, briefing, analyzing, synthesizing, note taking, outlining, communicating, and exam taking skills. The course also addresses study habits, time management, and stress reduction. Graded pass/fail.

LAW 821 Legal Research
1 credit
Basic elements of legal research in print and electronic resources, including generating search terms; researching secondary sources, cases, and statutes; and using citators for case research.

LAW 850 First Amendment Seminar
3 credits
Amendment's Speech, Press, Association, Establishment, and Free Exercise Clauses, and the interrelatedness between free expression and religious freedoms. The course investigates analytical problems in First Amendment jurisprudence including philosophical foundations of free expression, free association, free exercise of religion, and the prohibition against government establishment of religion.
Prereq: LAW 816 and LAW 905.

LAW 851 Advanced Torts
2-3 credits
Selected topics in tort law, including products liability, traditional strict liability, defamation, and business torts. Two-credit course covers fewer areas of study.
Prereq: LAW 809 .

LAW 852 Natural Resource and Environmental Law Field Course
2 credits
Summer field course exploring the implementation of natural resource and environmental law on the ground in Idaho, focusing on the effects of state and federal resource management and protection statutes on public and private landscapes. Accelerated course.
Prereq: Permission .

LAW 853 Education Law
3 credits
Issues pertaining to the history and structure of U.S. public education including religious and private school alternatives, school funding, curriculum and governance, student supervision, equal educational opportunity issues including race and disability, employment issues including collective bargaining, and students' and teachers' rights and responsibilities including free speech and due process.

LAW 854 Corporate Taxation
2-3 credits
Taxation of all aspects of a corporation's life-cycle, including formation, financing, capital structure, distributions, redemptions, reorganizations, and liquidation. The course covers both tax provisions applying to all corporations and those provisions applying specifically to the flow-though "S" corporation. Two-credit course covers fewer areas of study. Recommended Preparation: LAW 919.
Prereq: LAW 930 .

LAW 855 Water Law Practicum
2-3 credits
Skills course where students take part in various stages of a water law dispute including settlement negotiations, state supreme court briefing, and oral argument. In-depth treatment of cutting edge issues in water law , with an emphasis on the intricate interplay between law, history and science. Two-credit course covers fewer areas of study.
Prereq: LAW 942
Coreq: LAW 971 .

LAW 856 Legal Writing and Research for LL.M. Students
3 credits
Basic principles of American legal writing for foreign-trained lawyers. Topics covered include the American court system, common law, case briefing, legal analysis, and fundamentals of legal research. Students complete multiple writing and research assignments of increasing complexity geared to exercise their analytical and problem solving abilities.
Prereq: Registered as L.L.M. student .

LAW 857 Introduction to American Law and Legal Education
3 credits
Examination of the American legal system for foreign-trained lawyers. Topics, related to both statutory and common law, include fundamental legal concepts, key doctrinal areas of law, the American legal education system, how laws are made and function, and how law evolves over time.
Prereq: Registered as L.L.M. student .

LAW 858 Advanced Criminal Procedure: Adjudications
3 credits
A study of the federal constitutional constraints on criminal adjudications, with a focus on the right to counsel, pretrial release, the grand jury, prosecutorial discretion, discovery obligations, guilty pleas and plea bargaining, jury trial rights, double jeopardy, and sentencing.
Prereq or Coreq: LAW 953 .

LAW 859 Advanced Advocacy
2 credits
A simulation course focusing on advanced persuasive writing techniques and oral advocacy skills.
Prereq: LAW 815 .

LAW 860 Applied Legal Reasoning
3 credits
Training in the analytical, writing, and organizational skills needed to efficiently analyze legal questions under time pressure and prepare for the bar exam. Using 2–3 doctrinal subjects, students apply critical reading, issue spotting, organizational, and writing skills to multiple-choice, essay, and performance problems. Open only to students in their last year of law school. Graded pass/fail.

LAW 861 Civil Rights Litigation
3 credits
In Civil Rights Litigation, students develop a basic understanding of claims, defenses and remedies available in 42 U.S.C. § 1983 actions, including claims brought against the police and prisons. Students will also be introduced to employment, disability and housing discrimination. They will be able to identify and evaluate litigation and alternative dispute resolution strategy, from both a plaintiff's and defendant's perspective.
Prereq: Law 816 .

LAW 901 (s) Seminar
Credit arranged
See the *Class Schedule* for specific topics.

LAW 903 Introduction to Intellectual Property
3 credits
Introduction to the four substantive areas of intellectual property: trade secrets, trademarks, copyrights, and patents, with an emphasis on the tension in each body of law between private rights and the public's interest.

LAW 904 Federal Courts
3 credits
The constitutional structure and the practical role of the federal court system, with great emphasis on the working relationship between federal and state courts.

LAW 905 Constitutional Law II
3 credits
Study of individual rights and liberties protected by the Constitution.

LAW 906 Natural Resource Law Seminar
3 credits
Selected topics in natural resources law and policy. Topics vary with the interest of the instructor and students. (Spring, alt/yrs)

LAW 907 Administrative Law
3 credits
An examination of the constitutional limits on administrative agencies, the procedural requirements for agency decision making, and judicial review of agency actions. The focus is on federal administrative law.

LAW 908 Workplace Law
4 credits
Survey course covering state common law exceptions to the employment at will doctrine, federal anti-discrimination statutes, federal statutory protection of collective activity, and other state and federal law governing the employment relationship; exploration of the processes of hiring, firing, and setting the terms and conditions of employment.

LAW 910 Antitrust
3 credits
Study of the application of the antitrust law to cooperation among competitors, agreements between suppliers and customers regarding the resale of products, exclusive dealing arrangements, monopolization, and mergers.

LAW 912 Civil Mediation
2 credits
Credit may not be earned in both LAW 912 and LAW 913. A study of conflict resolution, negotiation, and mediation theory, process, and skills. Exploration of each stage of the mediation process and attendant strategies and skills. Offered through the Northwest Institute for Dispute Resolution. Accelerated course. Graded P/F.
Prereq: Permission .

LAW 913 Family Mediation
2 credits
Credit may not be earned in both LAW 912 and LAW 913. A skills-based study of family mediation designed for those wishing to mediate or represent clients in the mediation process. Topics covered include structuring the mediation process, guidelines for division of assets, construction of parenting plans, and ethical concerns. Offered through the Northwest Institute for Dispute Resolution. Accelerated course. Graded P/F.
Prereq: Permission .

LAW 914 (s) Dispute Resolution
1 credit, max 4
Specialty course in dispute resolution offered through the Northwest Institute for Dispute Resolution. Course topic and content will be announced in advance. Accelerated course. Graded P/F.
Prereq: Permission .

LAW 916 Public International Law
3 credits
Survey of major areas of the law of nations and international organizations.

LAW 917 Negotiation and Appropriate Dispute Resolution
3 credits
Simulation and seminar style instruction in negotiation techniques, mediation and arbitration, focusing on skill development and legal and ethical issues frequently faced by lawyers.

LAW 918 Internet Law
2-3 credits
Introduction to the legal and policy challenges presented by commerce and communication on the Internet. Topics include Internet governance, sovereignty and jurisdiction, free speech, privacy and surveillance, and the protection of intellectual property. Two-credit course covers fewer areas of study.

LAW 919 Business Associations
4 credits
Agency, partnerships, corporations, and other types of business organizations; limitations on powers and authority of partners, corporate officers, and directors.

LAW 920 Securities Regulation
3 credits
The law of corporate finance under the Securities Act of 1933 and the Securities Exchange Act of 1934.

LAW 921 Accounting for Lawyers
2 credits
Examination of basic accounting principles designed as background for the tax and business law courses for those students without accounting and business experience and intended to make the lawyer conversant with accountants.

LAW 922 Trademarks and Trade Dress
2 credits
Trademarks and trade dress include words, symbols, colors, pictures, packaging and product design by which businesses identify themselves and their products and services. This course examines the validity of rights claimed in trademarks and trade dress and what conduct infringes these rights.

LAW 923 Payment Systems
2-3 credits
The study of paper-based and other methods of payment under state and federal law with primary focus on the law of negotiable instruments under Article 3 of the Uniform Commercial Code, Bank Deposits and Collections, and Electronic Funds Transfers under Articles 4 and 4A of the UCC and Federal Reserve Board Regulations J and CC and related federal statutes.

LAW 924 Sales
3 credits
The study of the law relating to the sale of goods under Article 2 of the Uniform Commercial Code and related statutes and treaties, including introduction to the structure, purposes, and policies of the Uniform Commercial Code.

LAW 925 Property Security
3 credits
Overview of the law relating to secured credit including the mechanisms for creating enforceable security and mortgage interests in real and personal property.

LAW 926 Bankruptcy
3 credits
Federal bankruptcy law, the collective forum for resolving the rights of financially distressed debtors and their creditors, emphasizing basic principles applicable to all filings, liquidation, or rehabilitation of consumer debtors, and the pervasive effect of bankruptcy on everything from family law to business transactions and relationships.

LAW 927 Partnership and LLC Taxation
2-3 credits
Examination of the income tax treatment of partners and partnerships, including Limited Liability Companies and their members, covering the entity's life cycle through formation, operation, and liquidation. Topics include the income tax consequences of the sale of a partnership interest, as well as the death or retirement of a partner. Two-credit course covers fewer areas of study.
Prereq: LAW 930 .

LAW 928 Tribal Nation Economics and Law
3 credits
Cross-listed with AIST 478
Survey of economic development strategies by various Tribal Nations, including an overview of federal incentive programs and disincentives for the growth of strong tribal economies. Tribal legal codes, commercial projects, and federal Indian law parameters will be discussed. Topics will include: the tribal government-owned corporate model, gaming enterprises, economic diversification, the federal 8(a) program, limitations on tribal tax-exempt bond offerings, and value-added on-reservation products. LAW 928 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 478 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course. (Spring, alt/yrs)

LAW 930 Taxation
3-4 credits
Income and deductions, accounting methods, transactions resulting in capital gain, deferral of tax, and choice of the taxable person; introduction to tax procedure and to income taxation of trusts, estates, and partnerships.

LAW 931 Patents
2 credits
This course will examine the law and policy underlying the U.S. patent system, with a focus on the legal means for obtaining, challenging, and enforcing patent rights. A technical background is not required, but a willingness to engage with some technical aspects of patentable subject matter is.

LAW 932 Estate Planning
3 credits
Inter vivos, testate, and intestate disposition of property with emphasis upon estate and gift tax impact and consideration of the law of future interests.
Prereq or **Coreq:** LAW 941.

LAW 933 State Debtor-Creditor Law
2 credits
Study of the legal mechanisms for enforcing judgments, and the rights and protections of debtors and creditors as a matter of state law.

LAW 934 Land-Use Law and Planning
3 credits
This course addresses the regulation of private lands by state and local governments; will investigate social and cultural agreements about land as influenced by and institutionalized in Constitutional protections, state statutory regimes and local programs; and will develop a working knowledge of the general legal principles, and policy and planning issues relevant to private land management. Enrollment limited to 25 students.

LAW 937 Wildlife Law and Policy
3 credits
An examination of state and federal law applicable to wildlife. (Spring, alt/yrs)

LAW 938 International Environmental and Water Law
3 credits
An examination of international environmental law and the law of international water courses. (Spring only)

LAW 939 Law, Science, and the Environment
2 credits
The use of science in the courtroom and in agency decision making, with emphasis on natural resources and environmental law. This course will explore both the process and substantive areas of selected areas of science and the law. Recommended Preparation: LAW 907. (Spring, alt/yrs)

LAW 940 International Human Rights
3 credits
An overview of international rights and humanitarian law and advocacy, including a focus on particular topics of timely interest determined by the instructor and students.

LAW 941 Wills, Estates, and Trusts
3 credits
Intestate succession, wills, and administration of estates in probate.

LAW 942 Water Law I
1-2 credits
The basics of water allocation law with a focus on western water law. Study of the development of the common law of water allocation and of comprehensive statutory systems including the implementation of water law through administrative agencies and water rights adjudication. One-credit course covers fewer areas of study.

LAW 944 State and Local Government Law
3 credits
Review of the source, scope, and limits of local government power, with reference to Idaho and other state examples. The course will consider the relationship of local governments to the state and federal government, as well as to neighboring communities and individuals.

LAW 945 Community Property
2 credits
Special problems that arise in connection with the community property system in the western states.

LAW 946 Water and Energy Policy Seminar
2 credits
An examination of advanced topics in water and energy law. Recommended Preparation: LAW 942. (Spring, alt/yrs)

LAW 947 Environmental Law
3 credits
Environmental planning and protection, regulation of air and water pollution, waste disposal, use of pesticides and other toxic chemicals, and remedies for environmental injury. Cooperative: open to WSU degree-seeking students.

LAW 948 Public Lands and Resources Law
3 credits
This course examines the natural resource allocation and management systems applicable to the public lands, including the Federal Land Policy and Management Act, National Forest Management Act, Mineral Leasing Act, Wilderness Act, and other relevant federal statutes.

LAW 949 Native American Law
3 credits
Cross-listed with AIST 420
Study of Tribal Sovereignty and interaction with the U.S. government at various levels with an emphasis on treaty rights, jurisdictional issues, the trust relationship, protection of lands, the eras of U.S. Indian policy, and the continued assertion of tribal rights and interests. LAW 949 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 420 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course.

LAW 950 Evidence
3 credits
The law governing the presentation of proof in Idaho and federal courts.

LAW 951 Environmental Policy
3 credits
An examination of advanced topics in environmental law and policy. Recommended Preparation: LAW 947. Limited enrollment. (Spring, alt/yrs)

LAW 952 Remedies
3 credits
Consideration of legal and equitable relief available to aggrieved parties in contractual or other relationships.

LAW 953 Criminal Procedure: Investigations
3 credits
A study of the federal constitutional constraints on criminal investigations, with a focus on searches and seizures, arrests, interrogations, identification procedures, and the right to counsel.

LAW 954 Trial Skills
3 credits
Credit cannot be earned in both LAW 954 and LAW 958. Instruction in the skills fundamental to litigation and the techniques of persuasive witness examination and argument, combining classroom instruction and individually critiqued student exercises. Limited enrollment.
Prereq: LAW 950 and Permission .

LAW 955 Appellate Advocacy Program
2 credits
A brief-writing and oral advocacy course run as the McNichols Moot Court competition. Students attend class once a week for the first six weeks of the semester, write a two-issue appellate brief, and make a minimum of two oral arguments. Accelerated course. Graded P/NP; credits earned are not class hours.
Prereq: LAW 815 .

LAW 956 Moot Court
1 or 2 credits
Preparation of appellate briefs and argument of cases orally in regional or national competition; grading and evaluating briefs of students participating in second-year appellate advocacy program (with approval of the faculty advisor of the second-year appellate advocacy program); the faculty supervisor of each competition is the final arbiter of the number of credits awarded within the guidelines. Graded P/F; credits earned are not class hours. Only those students who will complete all the activities for their appellate moot court program (including attending the competition) by the end of fall semester may register for credits in the fall semester; all other students eligible for credits under this course register in the spring. Graded P/F; credits earned are not class hours. Limited enrollment.

LAW 957 Mock Trial
2 credits
Participation as an attorney on a mock trial team in regional or national competition; the faculty supervisor of each competition is the final arbiter of the credits awarded within the guidelines.
Prereq: LAW 954 or LAW 958 or permission.

LAW 958 Trial Advocacy
2 credits
Credit cannot be earned in both LAW 954 and LAW 958. An intensive seven-day course offered the week before classes regularly begin in the fall. The course follows the National Institute of Trial Advocacy Training format of faculty demonstration, discussion, student performance, and critique, culminating in a mock jury trial on the last day of the training. Limited enrollment. Graded P/F.
Prereq: LAW 950 and Permission; Limited to third-year law students unless waived by the Director of Clinical Programs.

LAW 959 Critical Legal Studies
2-3 credits, max 3
Critical Studies focuses on deconstructing traditional hierarchies within the law and legal institutions and looks to foster change by critically analyzing the law and these institutions. This course will cover one or more of the following subjects: Feminism, Critical Race Studies, Race-Feminism, Gender/Gender Identity/Queer Studies. 3 credit course covers more areas of study.

LAW 960 Conflict of Laws
2-3 credits
A study of the principles for deciding which law applies to incidents and transactions crossing state lines and of the constitutional limitations on a state's rights to impose its own law in suits arising out of such incidents and transactions; enforcement of foreign judgments, the jurisdiction of courts, and the special jurisdictional problems in domestic relations cases.

LAW 961 Jurisprudence
2 credits
Consideration of the various views and philosophies of law as expressed in classical and contemporary writings; methods of legal analysis, the relationship between law and justice, between law and power, and between law and truth.

LAW 962 Professional Responsibility
3 credits
Status and function of the legal profession, responsibility to clients, the profession, the public, and the administration of justice. This course must be taken no later than the summer following the second year of law studies.

LAW 963 Family Law
3 credits
Legal problems of the family, including marriage, annulment, adoption, and divorce.

LAW 964 Children and the Law
2-3 credits
Examines the legal status of children, including topics such as the parent-child relationship, guardianship, representation of children, neglect, and adoption. Two-credit course covers fewer areas of study.

LAW 965 Elder Law
2-3 credits
An overview of the legal regimes and practical issues that face lawyers representing older clients. Topics include Social Security, pensions, annuities, Medicare, Medicaid, health care decision-making, property management, special needs trusts, guardianships, conservatorships, elder abuse, elder housing, end of life issues, and special ethical issues for attorneys representing elder persons. Two-credit course covers fewer areas of study.

LAW 966 Legal Drafting
2 credits
This course will familiarize students with transactional and litigation documents, writing for different audiences, and the effective and appropriate use of forms. Students will focus on strategic use of language, avoiding ambiguity, and writing with clarity. General topics covered will include client letters, contracts, and a complaint and answer. Limited enrollment.

LAW 967 Advanced Legal Writing
2 credits
This course will focus on advanced writing concepts, including advanced study of standards of review, development of policy arguments and legislative intent analysis, writing jury instructions, drafting statutes, and drafting judicial opinions; additionally, there will be a heavy emphasis on style. As such, it is assumed that students have mastered the skills learned in Legal Research & Writing. This course does not satisfy the upper division writing requirement. Limited enrollment.
Prereq: LAW 815 with a minimum grade of 'C' or Permission of instructor .

LAW 968 Domestic Violence and the Law
2-3 credits
This seminar will cover the legal system's response to the problem of domestic violence and to a lesser extent, stalking and sexual assault. Students will explore both civil and criminal avenues of redress. Existing shortcomings of those responses, and proposed reforms, will be examined. The course will address how domestic violence is treated in a variety of legal contexts, including in relation to child abuse, custody, visitation, mediation, parent education at divorce, relocation, child abduction, and torts. Students will partner with members of the Domestic Violence and Sexual Assault Clinic to assist clinic students on actual domestic violence and sexual assault cases. Students are expected to complete sixty hours of clinical service, a paper and a class presentation. Students enrolled in the Domestic Violence and Sexual Assault clinic may take the Domestic Violence & the Law seminar for 2 credit hours and will not be required to complete additional hours of clinical service.

LAW 969 Water Law II
2 credits
In-depth study of topics necessary for the modern practice of water law by approaching water law from the watershed perspective. This perspective also tends to reflect the perspective of water users and other interests who seek solutions to problems that take into account the interaction of the fragmented system of water regulation in the United States
Prereq: LAW 942 .

LAW 970 Advanced Legal Research
2 credits
An advanced course covering all forms of materials, in all formats (print, microformat, electronic), available for conducting legal research.
Prereq: First year legal, research and writing .

LAW 971 Lawyering Process Seminar
2 credits
Client representation skills, with an emphasis on pre-trial civil litigation; classroom and simulation instruction in interviewing, counseling and negotiating skills, pleading, discovery, and motion practice. Limited enrollment.

LAW 973 Non-Classroom Credit Public Service Externship
1-10 credits, max 10
Students perform legal work in selected public service positions under the supervision of experienced judges and lawyers. Graded P/F. Credits earned are not classroom credits. Note: a maximum of 5 credits may be taken during the summer semester.
Prereq: Permission .

LAW 974 Legal Aid Clinic
1-6 credits, max 9
From time to time, specific legal aid clinics may be offered. The content of such clinics is announced in advance of the semester in which they are offered.
Prereq: LAW 962; and permission; and qualification for limited license as legal intern in Idaho .

LAW 975 Classroom Credit Public Service Externship
1-5 credits, max 10
Students perform legal work in selected public service positions under the supervision of experienced judges and lawyers. Students must attend periodic classes. Graded P/F.
Prereq: Permission .

LAW 976 Semester in Practice
1-12 credits, max 12
Students attend periodic classes and perform legal work in the public or private sector under the supervision of a faculty supervisor. Open only to students in their last year of law school. Graded P/F.
Prereq: Permission .

LAW 977 Clinical Lab
1 credit, max 4
One-credit lab courses providing clinical experience for interested upper-division students. The labs, designed to allow students to obtain practical experience in conjunction with upper-division substantive courses, labs are supervised by experienced practitioners. Graded P/F.
Prereq: Permission.

LAW 978 Entrepreneurship Law Clinic
1-6 credits, max 9
Real-life experience handling transactional legal problems and assisting businesses and not-for-profits.
Prereq: LAW 919 and LAW 962; and LAW 966, LAW 967, or LAW 971; and permission; and qualification for limited license as legal intern in Idaho .

LAW 979 Native American Natural Resource Law
3 credits
Cross-listed with AIST 421
Study of the natural resources over which Tribal Nations assert stewardship or seek to influence others regarding protection of resources including sacred sites, land use and environmental protection, natural resource development, taxation, water rights, rights associated with hunting, fishing and gathering, and international approaches to indigenous lands and resources. Recommended Preparation: LAW 949. LAW 979 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 421 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course.

LAW 980 Copyrights
2-3 credits
A survey of U.S. domestic copyright law, focusing on current provisions of the Copyright Act of 1976, as amended, and leading cases interpreting those provisions. Particular attention is paid to policy challenges created by the Internet and by the increasing internationalization of copyright law. Two-credit course covers fewer areas of study.

LAW 981 Critical Legal Studies Journal
1-4 credits, max 4
Participation in the student edited Crit Law Journal. Credit awarded upon approval of the editor-in-chief and faculty advisor. Graded pass-fail; credits earned are not classroom credit hours.
Prereq: Acceptance to the Crit Journal .

LAW 982 Law Review
1-4 credits, max 4
Graded P/F; credits earned are not class hours. The awarding of credit is subject to approval by the editor-in-chief and faculty advisor.

LAW 983 Directed Study
1-2 credits, max 4
Individual research on a significant legal problem and the writing of a paper thereon that must be approved by the faculty member under whose direction the work is done. Graded P/F; credits earned are not class hours.
Prereq: Permission.

LAW 984 Real Estate Transactions
2-3 credits
Aspects of the standard commercial real estate purchase transaction, including real estate contracts, title issues, construction, default, financing, leasing, and structuring real estate development transactions. Two-credit course covers fewer areas of study.

LAW 985 Immigration Law and Policy
3 credits
The rights and limitations relating to various types of immigration status, different kinds of visas, admission and removal procedures, grounds of inadmissibility and deportation, and defenses.

LAW 986 Judicial Clerkship Seminar
1-2 credits
Seminar focusing on advanced writing concepts within the judicial context, with instruction on common types of legal writing practiced by judicial clerks.
Prereq: Permission .

LAW 987 Law Practice Management
1-2 credits
Topics in the business of law practice, including accepting and billing clients, managing case files and client trust accounts, making business arrangements, and managing human, physical, and financial resources. Graded Pass/No Pass. Two-credit course covers more areas of study.

LAW 988 Writing the Environment
1 credit
Intensive writing course limited to 3L students completing the Natural Resources and Environmental Law Emphasis. Students will develop critical legal writing and analytical skills through public presentations and defenses of their own written work, and the review and editing of their colleagues' works. Permission required. Graded Pass/No Pass. (Fall only)

LAW 989 Mass Media Law
2 credits
Seminar addressing legal issues in new technologies and the rapidly changing mass-media environment. Topics are generally organized around a single theme, such as First Amendment law and theory, privacy or Freedom of Information Act issues, commercial speech regulation, and media and the electoral process.

LAW 991 Skill Practicum
Credit arranged
From time to time, specific skills courses are arranged and made available for a semester. The exact content of each skills course is announced in advance of the semester in which it is offered.

LAW 992 White Collar Crime
2-3 credits
Federal law prohibiting financial, non-violent crime, including fraud, racketeering, and bribery. The course examines principles of statutory interpretation, grand jury investigations, parallel civil proceedings, corporate and individual responsibility, sentencing guidelines, and federal-state coordination.

LAW 994 Economic Development Clinic
1-6 credits, max 9
Legal aid clinic in which legal interns assist Idaho counties, cities, tribes, and non-governmental agencies with economic development issues and legal problems. Recommended Preparation: LAW 934.
Prereq: LAW 962; and permission; and qualification for limited license as legal intern in Idaho .

LAW 995 Main Street Law Clinic
1-6 credits, max 9
Representing clients in proceedings primarily involving family law issues including divorce, custody, termination of parental rights, adoption, and contempt proceedings. Clinic students also advocate for victims in domestic violence protection order hearings, defend clients in criminal misdemeanor cases, and represent clients in consumer protection matters, landlord-tenant disputes, and probate actions.
Prereq: LAW 950, LAW 962, and LAW 971; and permission; and qualification for limited license as legal intern in Idaho
Coreq: LAW 958.

LAW 996 Immigration Litigation & Appellate Clinic
1-6 credits, max 9
Represent immigrant clients under the supervision of clinical faculty. Cases may include deportation defense and challenges to immigration detention on the U.S. Course of Appeals for the Ninth Circuit, the Board of Immigration Appeals, and the Immigration Courses, as well as affirmative applications for citizenship, permanent, residence, asylum, and other protections.
Prereq: LAW 950, LAW 962, LAW 971, and LAW 985 or permission; and permission; and qualification for limited license as legal intern in Idaho
Coreq: LAW 958 .

LAW 997 Mediation Clinic
1-6 credits, max 9
Legal aid clinic in which legal interns provide mediation services and hone their skills in communication, facilitation, negotiation, organization, and ethics.
Prereq: LAW 912 or LAW 913; and LAW 950, LAW 962, and LAW 971; and permission; and qualification for limited license as legal intern in Idaho .

LAW 998 Tax Clinic
2-6 credits, max 9
Representation of low-income taxpayers in disputes with the IRS at the audit, appeals, collection, and Tax Court levels. Students are exposed to the Boise tax community through frequent practitioner guest lecturers, an IRS field trip, and by attending Tax Court calendars, and they are required to complete a community outreach project. Recommended Preparation: LAW 927, LAW 950, and LAW 958.
Prereq: LAW 930, LAW 962, and LAW 971; and permission; and qualification for limited license as legal intern in Idaho .

LAW 999 (s) Study Abroad/Off Campus
Credit arranged
Graded P/F.
Prereq: Permission of Associate Dean for Students and Administration, College of Law/

LIBRARY SCIENCE (LIBS)

LIBS 404 (s) Special Topics
Credit arranged.

LIBS 410 Libraries and their Collection: Materials Selection
3 credits
Joint-listed with LIBS 510
Introduction to library science theory and practice with emphasis on material selection and evaluation. Research project and paper required for graduate credit.

LIBS 413 Computer Applications in Libraries
3 credits
Theory and practice of current models of library automation, focusing on choosing, evaluating, and implementing technological tools and services for school and public libraries.
Prereq: LIBS 410 or LIBS 510
Coreq: LIBS 414 and LIBS 418.

LIBS 414 Reference and Information Services
3 credits
Joint-listed with LIBS 514
Introduction to theory and practice of reference and information services, with emphasis on material selection, evaluation, and evaluation for school and public libraries as well as professional standards and rubrics. Research project and paper required for graduate credit.
Prereq: LIBS 410
Coreq: LIBS 413 and LIBS 418.

LIBS 415 Technical Services for Small Libraries
1 credit
Examine library technical services of the small or one-person public or school library. Explore techniques for finding sources for material, using cataloging systems to provide access, and processing materials to get them ready for use. Print, multimedia, and electronic formats, automatic systems and networking will be discussed. Recommended Preparation: LibS 425.

LIBS 418 Classification and Cataloging
3 credits
Joint-listed with LIBS 518
Organization of library materials, principles of cataloging, subject analysis, classification, bibliographic methods, Dewey decimal system. Research project and paper required for graduate credit.
Prereq: LIBS 410
Coreq: LIBS 413 and LIBS 414.

LIBS 425 School Library Administration, Leadership, and Management
3 credits
Joint-listed with LIBS 525
This course explores the organization of school libraries with an emphasis on effective management and leadership. Research project and paper required for graduate credit.
Prereq or Coreq: LIBS 433.

LIBS 427 Library and Media Center Practicum
3 credits
Practice experience as a teacher-librarian under professional supervision for the purpose of obtaining an endorsement. Ninety hours of supervised experience per credit.
Prereq: 15 credits of Library Science courses; and Departmental and Site Permission
Prereq or Coreq: LIBS 425 .

LIBS 430 Children's Literature for Teacher Librarian
3 credits
This course will develop students' basic knowledge and understanding of the field of children's literature, particularly as it pertains to teacher librarians, with a focus on children ages 2-12. This course will emphasize skills, tools, and insights necessary for effective professional librarianship in the area of services to children.
Prereq: LIBS 413 and LIBS 414 and LIBS 418; or Permission
Coreq: LIBS 433 .

LIBS 431 Adolescent Literature for Teacher Librarians
3 credits
This course will develop students' knowledge of adolescent literature as it pertains to Teacher Librarians, with a focus on youth grades 6-12. It emphasizes the skills and discernment necessary by the Teacher Librarian to effectively serve adolescents. Evaluation tools for selecting literature and electronic resources will be covered, and issues relating to materials selection and promotion for the secondary school library will be explored.
Prereq: LIBS 413 and LIBS 414 and LIBS 418; or Permission
Coreq: LIBS 433 .

LIBS 433 Information Literacy for the Teacher Librarian
3 credits
Explores the role of the Teacher Librarian in providing information literacy instruction. Defines information literacy, as well as places it in a national, state and local framework. The research process as it correlates with information literacy and relevant educational theory is covered.
Prereq or Coreq: LIBS 430 or LIBS 431 or Permission .

LIBS 504 (s) Special Topics
Credit arranged.

LIBS 510 Libraries and their Collection: Materials Selection
3 credits
Joint-listed with LIBS 410
Introduction to library science theory and practice with emphasis on material selection and evaluation. Research project and paper required for graduate credit.
Prereq: Instructor Permission.

LIBS 514 Reference and Information Services
3 credits
Joint-listed with LIBS 414
Introduction to theory and practice of reference and information services, with emphasis on material selection, evaluation, and evaluation for school and public libraries as well as professional standards and rubrics. Research project and paper required for graduate credit.
Prereq: Instructor Permission
Coreq: LIBS 413 and LIBS 418.

LIBS 518 Classification and Cataloging
3 credits
Joint-listed with LIBS 418
Organization of library materials, principles of cataloging, subject analysis, classification, bibliographic methods, Dewey decimal system. Research project and paper required for graduate credit.
Prereq: Instructor Permission
Coreq: LIBS 413 and LIBS 414.

LIBS 525 School Library Administration, Leadership, and Management
3 credits
Joint-listed with LIBS 425
This course explores the organization of school libraries with an emphasis on effective management and leadership. Research project and paper required for graduate credit.
Prereq or Coreq: LIBS 433
Prereq: Instructor Permission.

MANAGEMENT & HUMAN RESOURCES (MHR)

MHR 204 (s) Special Topics
Credit arranged.

MHR 298 (s) Internship
1-3 credits, max 6.

MHR 299 (s) Directed Study
Credit arranged.

MHR 310 Leading Organizations and People
3 credits
Great leaders are made, not born. This course prepares students to effectively acquire and deploy human capital, lead individuals and teams, inspire and motivate people to perform the tasks needed to achieve ambitious goals, and inspire innovation. Includes international and ethical issues. May involve evening exams and presentation practices.
Prereq: ACCT 201 or ACCT 202, BUS 190, and ECON 201 or ECON 202 or ECON 272.

MHR 311 Introduction to Management
3 credits
Planning, organizing resources, leadership, and control in small organizations, large businesses, family businesses and start-ups; evolution of philosophies of management, decision making, motivation, human relations, and communication; organizational behavior and theory; history and present management practices, showing interrelationships between the needs and expectations of the individual, the organization, and society. May involve evening exams.

MHR 398 (s) Internship
1-3 credits, max 6.

MHR 404 (s) Special Topics
Credit arranged.

MHR 411 Acquiring Human Capital
3 credits
An organization's ability to develop and sustain a competitive advantage through human resources begins with successfully attracting and acquiring talented and motivated human capital. This course addresses recruitment and selection practices and their theoretical underpinnings, including such topics as individual differences theories, decision-making heuristics and biases, human perception, staffing strategies, human resource planning, strategic human resource management, EEO and legal issues, job analysis and competency modeling, recruitment methods, selection techniques, and selection validation.
Prereq: MHR 310 .

MHR 412 Human Resource Management
3 credits
Human resource/personnel management functions including recruitment, training, compensation, performance appraisal, health and safety, labor relations, and legal issues.
Prereq: BLAW 265; and MHR 310 or MHR 311.

MHR 413 Organizational Behavior
3 credits
Micro oriented treatment of areas including communication, motivation, group process, conflict, leadership style.
Prereq: AGEC 278, MHR 310, or MHR 311.

MHR 416 Managing Reward Systems
3 credits
A key factor in accomplishing organizational goals is the ability to retain and motivate talented human resources. This course addresses compensation and benefits practices and their theoretical underpinnings, including such topics as motivation theories (e.g., equity theory), learning theories, job evaluation, monetary-nonmonetary reward programs, individual, group and organizational incentives.
Prereq: MHR 310 .

MHR 417 Deploying and Developing Human Capital
3 credits
Managers work with and through others to achieve organizational goals; therefore, managers must be able to assess and develop an organization's human resources. This course addresses training, development and performance management practices and their theoretical underpinnings, including such topics as motivation theories (e.g., goal setting theory, expectancy theory), learning theories, leadership, employee orientation, needs assessment, training and development methods, evaluating training effectiveness, performance measurement, the HR Scorecard and delivering performance feedback.
Prereq: MHR 310.

MHR 418 Managing Organization Design and Leading Changes
3 credits
In order for an organization to develop and sustain a source of competitive advantage management must maintain a fit between an organization's strategy and its structure. This course addresses organization design and change practices that are used to integrate an organization's strategy with its people, positions, procedures, processes, culture, technology and or elements that comprise the organization and their theoretical underpinnings; including topics such as the Balanced Scorecard, open systems, organizational effectiveness, organizational technology, organization design for the global environment , power and politics, problem diagnosis, change implementation, resistance to change, the role of change agents, and changing the ethical climate.
Prereq: MHR 310 or MHR 311.

MHR 441 Maintaining Employee and Labor Relations
3 credits
Effective employer-employee relationships contribute to successful productivity, motivation, morale and retention. This course addresses employee and labor relations practices and their theoretical underpinnings, including such topics organizational culture and climate, intergroup conflict, communication, conflict resolution, investigating and resolving complaints, unionization and collective bargaining, applying and interpreting employment and labor laws, and maintaining positive relationships.
Prereq: MHR 310 or MHR 311.

MHR 499 (s) Directed Study
Credit arranged.

MHR 513 Leadership and Organizational Behavior
3 credits
Micro oriented treatment of areas including communication, motivation, group process, conflict, leadership style.

MANAGEMENT INFORMATION SYSTEMS (MIS)

MIS 204 (s) Special Topics
Credit arranged.

MIS 250 Introductory Systems Development
3 credits
Introduction to event-driven and object-oriented systems development in a graphical user interface environment; significant hands-on demonstrations and uses of a variety of integrated application development tools.
Prereq: 30 credits.

MIS 298 (s) Internship
1-3 credits, max 6.

MIS 299 (s) Directed Study
Credit arranged.

MIS 350 Managing Information
3 credits
Introduction to use and management of data to support decision making. Includes discussion of relevant international and ethical issues.
Prereq: STAT 251 or STAT 301; and BUS 252.

MIS 351 Intro to Elec Commerce
3 credits
Introduction to the economic, technology and management of e-commerce. Discussion of economic basis for e-commerce, business models, information technology, and management of technology related to the operation of an e-commerce business. May involve evening exams.
Prereq: ACCT 202 or ACCT 205.

MIS 353 Application Development
3 credits
Intro to the design and implementation of IS applications. Topics may include programming for mobile and distributed systems, usability, and security.
Prereq: Junior Standing.

MIS 355 Systems Analysis & Administration
3 credits
Introduction to analysis, development, and management of modern information systems. May involve evening exams.
Prereq: Junior Standing.

MIS 398 (s) Internship
1-3 credits, max 6.

MIS 404 (s) Special Topics
Credit arranged.

MIS 452 Business Telecommunications Management
3 credits
Survey of telecommunications management issues in a business environment; topics include local and wide area networks, telephony, public networks, and application of telecommunications technology in strategic business management.
Prereq: MIS 350, MIS 353, or MIS 355.

MIS 453 Database Design
3 credits
Introduction to modern database management systems and their use in solving business problems. May involve evening exams.
Prereq:MIS 350, MIS 353, MIS 355, or CS 120.

MIS 454 Issues in Information Systems
3 credits
Discussion of major topics of current importance in information systems.
Prereq: MIS 350, MIS 353 or MIS 355 .

MIS 455 Data Management for Big Data
3 credits
Joint-listed with MIS 555
Introduction to big data and the various data models related to managing "Big Data" and very large datasets. Emphasis will be on developing NOSQL data management systems. Additional topics may include data access, data analytics, and data visualization. Additional projects/assignments required for graduate credit.

MIS 456 Cybersecurity Competition
1 credit, max 6
Students will develop, practice, and validate cybersecurity skills. The skills developed from participating in the virtual labs will be used to participate in the competitions. Graded P/F.

MIS 499 (s) Directed Study
Credit arranged.

MIS 555 Data Management for Big Data
3 credits
Joint-listed with MIS 455
Introduction to big data and the various data models related to managing "Big Data" and very large datasets. Emphasis will be on developing NOSQL data management systems. Additional topics may include data access, data analytics, and data visualization. Additional projects/assignments required for graduate credit.

MARKETING (MKTG)

MKTG 204 (s) Special Topics
Credit arranged.

MKTG 298 (s) Internship
1-3 credits, max 6.

MKTG 299 (s) Directed Study
Credit arranged.

MKTG 321 Marketing
3 credits
Explores marketing as an integrating function of the firm. Includes the study of product, price, place, and promotions in the creation of customer value, international marketing, and the roles of corporate social responsibility and ethics in marketing decision making. May involve evening exams.

MKTG 324 Consumer Behavior
3 credits
Behavioral science theories, concepts, and methods applied to the understanding and prediction of consumer behavior, including industrial buyer behavior; emphasis on structuring marketing policy to fulfill consumer requirements. May involve evening exams.
Prereq or **Coreq:** MKTG 321.

MKTG 398 (s) Internship
1-3 credits, max 6.

MKTG 404 (s) Special Topics
Credit arranged.

MKTG 420 Integrated Marketing Communication
3 credits
Integrated Marketing Communications (IMC) from a marketing strategy perspective. Application of the IMC planning process and examination of the role of integration to create consistency of strategy using traditional promotion elements (advertising, public relations, sales promotion, reseller support, personal selling) and new media. May involve evening exams.
Prereq: MKTG 321.

MKTG 421 Marketing Research & Analysis
3 credits
Applied research focusing on marketing information needs for managerial decision making; includes research design, data collection methods, statistical analysis, and use of marketing information systems to forecast market and sales potential, measure effectiveness of promotions, and analyze new products and distribution of goods and services. May involve evening exams.
Prereq: STAT 251 or STAT 301; and MKTG 321.

MKTG 422 Sales Management
3 credits
Sales Management includes recruiting, selecting, training, compensating, motivating, supervising, and directing selling efforts. May involve evening exams.
Prereq: MKTG 321.

MKTG 424 Pricing Strategy and Tactics
3 credits
Formulation of pricing strategies and tactics for new and existing products and services; survey of pricing dynamics; competitor response to pricing strategies at the firm and product level; assessment of buyer price sensitivity.
Prereq: MKTG 321, and ECON 202 or ECON 272.

MKTG 425 Retail Distribution Mgmnt
3 credits
Analysis of retail operations including location, market selection, capital and physical requirements, store layout, merchandise management, customer relations, channel structure, and channel member relations. May involve evening exams.
Prereq: MKTG 321.

MKTG 426 Marketing Channels Management
3 credits
Analysis of planning, organization, and control issues related to distribution of goods and services; topics include retail and wholesale institutions, channel member behavior patterns, and vertical marketing systems.
Prereq: MKTG 321.

MKTG 427 Services Marketing
3 credits
Survey of concepts addressing distinctive marketing problems and opportunities in service industries, as well as current issues and trends in the service sector; includes discussion of strategies for marketing services, emphasizing the distinctive challenges and approaches that make the marketing of services different from marketing manufactured goods. May involve evening exams.
Prereq: MKTG 321.

MKTG 428 Marketing Management
3 credits
Discussion of major marketing management functions, including market and environmental analysis, as well as marketing planning, strategy, implementation, and control concepts; special emphasis on application of such concepts by developing a marketing plan that identifies market opportunities and proposes relevant marketing programs for a given case study. May involve evening exams.
Prereq: MKTG 321, MKTG 324, and MKTG 421; MKTG 420 or MKTG 422 or MKTG 424 or MKTG 425 or MKTG 426 or MKTG 427 or MKTG 482 or MKTG 495.

MKTG 431 Marketing Analytics
3 credits
Marketing Analytics is concerned with concepts, tools, methods, and applications of modeling and decision making to address important marketing issues such as pricing, segmentation, positioning, market forecasting, new product management and development, sales force management, and promotion planning. The course is aimed at providing students with analytic and interpretive skills needed to make intelligent and critical use of marketing data.
Prereq: MKTG 421 or STAT 431 .

MKTG 482 International Marketing
3 credits
Foreign market operations; economic, cultural, and political aspects of international markets and how they interact with the marketing mix.
Prereq: MKTG 321.

MKTG 495 Product Development and Brand Management
3 credits
Gen Ed: Senior Experience
Cross-listed with RMAT 495
This course examines product development strategy and the management of brands. Topics will include strategic intent of product development, the process of product development (ideation through post product launch evaluation), market and financial feasibility of product development, trends in product development, and managing brands (strategic brand management and managing brand equity).
Prereq: ECON 201, ECON 202, or ECON 272; and MKTG 321.
Coreq:MKTG 321.

MKTG 498 (s) Internship
1-3 credits, max 6.

MKTG 499 (s) Directed Study
Credit arranged.

MARTIN SCHOOL OF INT'L STUDIES (MRTN)

MRTN 204 (s) Special Topics
Credit arranged.

MRTN 299 (s) Directed Study
Credit arranged.

MRTN 403 (s) Workshop
Credit arranged.

MRTN 404 (s) Special Topics
Credit arranged.

MRTN 498 (s) Internship
Credit arranged.

MRTN 499 (s) Directed Study
Credit arranged.

MATERIALS SCIENCE & ENGR (MSE)

MSE 101 Introduction to Metallurgy and Materials Science
2 credits
Earth resources, metallurgy, materials science, and manufacturing. (Fall only)

MSE 201 Elements of Materials Science
3 credits
Principles relating properties of metals, ceramics, polymers, and composites to their structures.
Prereq: CHEM 111, CHEM 111L .

MSE 204 (s) Special Topics
Credit arranged.

MSE 299 (s) Directed Study
Credit arranged.

MSE 308 Thermodynamics of Materials
3 credits
First, second, and third laws of thermodynamics. Reaction equilibria. Phase diagrams. Thermodynamics of metallic and ceramic materials.
Prereq: MSE 201 and CHEM 112, CHEM 112L.
Coreq: MATH 310 .

MSE 313 Physical Metallurgy
3 credits
Theory, structure, and properties of materials. (Fall only)
Prereq: MSE 201 .

MSE 313L Physical Metallurgy Laboratory
1 credit
Metallographic principles and practices, hardness testing, structure-property correlations. One 2-hr lab per week.
Prereq or Coreq: MSE 313 .

MSE 340 Transport and Rate Processes I
4 credits
Cross-listed with CHE 340
Transport phenomena involving momentum, energy, and mass with applications to process equipment design. Coordinated lec-lab periods.
Prereq: ENGR 335, MATH 310, and CHE 223 or MSE 201 .

MSE 393 Materials Engineering Projects
1-3 credits, max 9
Problems of a research exploratory nature.
Prereq: Permission.

MSE 400 (s) Seminar
Credit arranged.

MSE 404 (s) Special Topics
Credit arranged.

MSE 412 Mechanical Behavior of Materials
3 credits
Theories of elasticity and plasticity, dislocation based plastic deformation, strengthening mechanisms, mechanical properties of solids and relevant testing methods, failure processes and theories, fracture mechanics. Coordinated lecture-lab periods.
Prereq: MSE 201 and Junior Standing; or Permission .

MSE 413 Phase Transformation and Kinetics
3 credits
Joint-listed with MSE 513
Free energy minimization algorithms. Construction of phase diagrams for liquid and solid systems. Reaction kinetics in liquid and solid systems. Determination of reaction kinetics parameters (reaction order, activation energy, reaction rate constants, etc.). Coordinated lec-lab periods. Additional projects/assignments reqd for grad cr.
Prereq: CHEM 112, CHEM 112L .

MSE 415 Materials Selection and Design
3 credits
Selection of materials for use in structural applications; consideration of environment, stress conditions, cost, and performance as guide to properties; optimization of choice of materials and fabrication methods; open-ended problems of real applications in various industries. Recommended Preparation: MSE 313 and MSE 456. (Spring only)
Prereq: MSE 201 and ENGR 350 .

MSE 417 Instrumental Analysis
3 credits
Principles and laboratory experiments in x-ray diffraction, scanning electron microscopy, transmission electron microscopy, thermal analysis, etc. (Fall only)
Prereq: Junior/Senior standing in an engineering discipline .

MSE 421 Light Metals
3 credits
Joint-listed with MSE 521
Principles behind the physical and extractive metallurgy of the light metals Al, Mg, Ti, Be; discussion of characteristics and applications of alloys based on these metals. Additional projects/assignments reqd for grad cr. Recommended Preparation: MSE 313.

MSE 423 Corrosion
3 credits
Joint-listed with MSE 523.
Engineering aspects of corrosion and its control presented in ways of importance to a practicing engineer. Topics include corrosion economics, detecting and monitoring corrosion, regulations, specifications, safety. Emphasis on corrosion monitoring and corrosion fundamentals: chemical and electrochemical reactions; chemical and electrochemical equilibria-including Pourbaix diagrams; electrochemical kinetics. Selection and use of materials, from stainless steels to plastics. Failure analysis. Additional projects/assignments reqd for graduate credit. (Fall only)
Prereq: CHEM 112, CHEM 112L and MSE 201 or CHE 223; or Permission .

MSE 427 Ceramics Materials
3 credits
Joint-listed with MSE 527.
Crystallography, ceramic crystal structures, phase diagrams, phase transformation; mechanical properties, thermal properties, electrical and magnetic properties. Additional projects/assignments reqd for graduate credit. Recommended Preparation: MSE 313.

MSE 432 Fundamentals of Thin Film Fabrication
3 credits
Physical deposition, chemical deposition, post deposition process, film characterization, and film properties. (Spring only)
Prereq: Senior standing or Permission .

MSE 434 Fundamentals of Polymeric Materials
3 credits
Polymer structure/property relationships and engineering applications. Topics include: overview of polymer chemistry and physics as they inform structure and properties for real-world applications, including sustainability considerations. Coordinated lecture-lab periods.
Prereq: CHEM 111, CHEM 111L and CHEM 112, CHEM 112L .

MSE 437 Radiation Effects on Materials
3 credits
Joint-listed with MSE 537. Cross-listed with NE 437, NE 537.
Interactions between radiation and solids.
Prereq: MSE 201 or Permission .

MSE 438 Fundamentals of Nuclear Materials
3 credits
Joint-listed with MSE 538. Cross-listed with NE 438, NE 538.
This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Students who wish to receive credit for the 500 level course are required to do term-projects and advanced problems. (Spring only)
Prereq: MSE 201 or NE 450; or Permission .

MSE 453 Process Analysis & Design I
3 credits
Cross-listed with CHE 453
Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. CHE 453 and CHE 454/MSE 453 and MSE 454 are to be taken in sequence. (Fall only)
Prereq: CHE 330, CHE 341, and CHE 423; or MSE 201, MSE 308, MSE 313, MSE 340, and MSE 412 .

MSE 454 Process Analysis & Design II
3 credits
Gen Ed: Senior Experience
Cross-listed with CHE 454
Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. MSE 453 and 454 are to be taken in sequence. (Spring only)
Prereq: CHE 453 or MSE 453 .

MSE 456 Metallic Materials
3 credits
Processes for extracting metals; various classes of metallic alloys; casting, powder metallurgy, mechanical working, and joining of metals. Emphasis on understanding relationship of processing, structure and properties. Some lab demonstration of metal fabrication processes included.
Prereq: MSE 313 or Permission .

MSE 464 Materials Physics and Engineering
3 credits
Joint-listed with MSE 564, Cross-listed with PHYS 464
Materials for circuits, Magnetism and magnetic materials, Ferroelectric and piezoelectric materials, Semiconductors, Optical properties of semiconductor for optoelectronics, thermal properties, electron band theory, superconductivity. Additional projects/assignments required for graduate credit. (Spring only)
Prereq: Senior standing in an Engineering or Physics major, or PHYS 305 and PHYS 321;or Permission.

MSE 498 (s) Internship
Credit arranged.

MSE 499 (s) Directed Study
Credit arranged.

MSE 500 Master's Research and Thesis
Credit arranged.

MSE 501 (s) Seminar
Credit arranged.

MSE 502 (s) Directed Study
Credit arranged.

MSE 504 (s) Special Topics
Credit arranged.

MSE 507 Microstructures and Defects
3 credits
This course correlates microstructure and defects with mechanical, physical and chemical properties of engineering materials. The fundamental characteristics of point, line, surface and volume defects in crystals will be elucidated on an advanced level. The essential elements of microstructure and their role in engineering materials will be discussed.
Prereq: Graduate standing or Permission .

MSE 511 Nuclear Degradation Mechanisms
3 credits
Cross-listed with NE 511.
Topics include various degradation mechanisms as applicable to nuclear structural components, including corrosion, creep, radiation damage etc.
Prereq: Graduate standing or Permission .

MSE 512 Nuclear Components Inspection
3 credits
Cross-listed with NE 512.
This course will cover various non-destructive testing techniques to evaluate the environmental degradation of the nuclear structural components. Remnant life estimation of structural components exposed to fatigue, creep and stress corrosion cracking service conditions will be discussed.
Prereq: Graduate standing or Permission .

MSE 513 Phase Transformation and Kinetics
3 credits
Joint-listed with MSE 413
Free energy minimization algorithms. Construction of phase diagrams for liquid and solid systems. Reaction kinetics in liquid and solid systems. Determination of reaction kinetics parameters (reaction order, activation energy, reaction rate constants, etc.). Coordinated lec-lab periods. Additional projects/assignments reqd for grad cr.
Prereq: CHEM 112, CHEM 112L.

MSE 517 Reaction Kinetics
3 credits
Application of absolute reaction rate theory; time and temperature dependence; kinetics of gas-solid reactions; kinetics of solid-solid reactions; corrosion, diffusion, and recrystallization. (Alt/yrs)
Prereq: Materials Science Engineering graduate student or Permission .

MSE 521 Light Metals
3 credits
Joint-listed with MSE 421
Principles behind the physical and extractive metallurgy of the light metals Al, Mg, Ti, Be; discussion of characteristics and applications of alloys based on these metals. Additional projects/assignments reqd for grad cr. Recommended Preparation: MSE 313.

MSE 523 Corrosion
3 credits
Joint-listed with MSE 423.
Engineering aspects of corrosion and its control presented in ways of importance to a practicing engineer. Topics include corrosion economics, detecting and monitoring corrosion, regulations, specifications, safety. Emphasis on corrosion monitoring and corrosion fundamentals: chemical and electrochemical reactions; chemical and electrochemical equilibria-including Pourbaix diagrams; electrochemical kinetics. Selection and use of materials, from stainless steels to plastics. Failure analysis. Additional projects/assignments reqd for graduate credit. (Fall only)
Prereq: CHEM 112, CHEM 112L and MSE 201 or CHE 223; or Permission .

MSE 525 Electronic Materials
3 credits
Study of major chemical and physical principles affecting properties of solid state engineering materials. Topics include bonding, carrier statistics, band-gap engineering, optical and transport properties, novel materials systems, characterization, magnetism, and comprehensive introduction to physics of solid state devices.
Prereq: Materials Science Engineering graduate student or Permission .

MSE 527 Ceramic Materials
3 credits
Joint-listed with MSE 427.
Crystallography, ceramic crystal structures, phase diagrams, phase transformation; mechanical properties, thermal properties, electrical and magnetic properties. Additional projects/assignments reqd for graduate credit. Recommended Preparation: MSE 313.

MSE 537 Radiation Effects on Materials
3 credits
Joint-listed with MSE 437. Cross-listed with NE 437, NE 537.
Interactions between radiation and solids.
Prereq: MSE 201 or Permission.

MSE 538 Fundamentals of Nuclear Materials
3 credits
Joint-listed with MSE 438. Cross-listed with NE 438, NE 538.
This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Students who wish to receive credit for the 500 level course are required to do term-projects and advanced problems. (Spring only)
Prereq: MSE 201 or NE 450; or Permission .

MSE 564 Materials Physics and Engineering
3 credits
Joint-listed with MSE 464, Cross-listed with PHYS 564
Materials for circuits, Magnetism and magnetic materials, Ferroelectric and piezoelectric materials, Semiconductors, Optical properties of semiconductor for optoelectronics, thermal properties, electron band theory, superconductivity. Additional projects/assignments required for graduate credit. (Spring only)
Prereq: Senior standing in an Engineering or Physics major, or PHYS 305 and PHYS 321;or Permission.

MSE 585 Nuclear Fuel Cycles
3 credits
Cross-listed with NE 585
Processes to support the existing LWR fuel cycle. Alternative fuel cycles including U-233, Pu239 and mixed oxide fuels, and advanced reactor concepts. Recycling and recovery of nuclear materials, with emphasis on traditional fast reactor recycle.
Prereq: Permission .

MSE 598 (s) Internship
Credit arranged .

MSE 599 (s) Research
Credit arranged.

MSE 600 Doctoral Research & Dissertation
Credit arranged.

MATHEMATICS (MATH)

Vertically-related courses in this subject field are: MATH 170-MATH 175-MATH 275-MATH 471-MATH 472.

Credit Limitations: MATH 108 carries no credit after MATH 137 or MATH 143; MATH 137 carries no credit after MATH 143; MATH 143 carries no credit after MATH 160 or MATH 170; MATH 170 carries 2 credits after MATH 160; MATH 160 carries no credit after MATH 170, MATH 215 carries no credit after MATH 461 or MATH 471.

MATH 108 Intermediate Algebra
3 credits
Carries no credit after MATH 137 or MATH 143. Review of algebra including factoring, rational expressions, exponents, radicals, quadratic equations, equations of lines. Taught using the Polya Math Center, a studio environment featuring group study, one-to-one interaction with instructors, computer-mediated modules, and lectures. Does not satisfy general education requirement.

MATH 123 Math in Modern Society
3 credits
Gen Ed: Mathematics
Discussion of some aspects of mathematical thought through the study of problems taken from areas such as logic, political science, management science, geometry, probability, and combinatorics; discussion of historical development and topics discovered in the past 100 years.

MATH 130 Finite Mathematics
3 credits
Gen Ed: Mathematics
Systems of linear equations and inequalities, matrices, linear programming, and probability.
Prereq: Sufficient score on SAT, ACT, or math placement test; or MATH 108 with a "C" or better. Required test scores can be found here: http://www.uidaho.edu/registrar/registration/placement.

MATH 137 Algebra with Applications
3 credits
Gen Ed: Mathematics
Carries no credit after MATH 143. Algebraic, exponential, logarithmic functions, systems of equations, applications.
Prereq: A grade of "C" or better in MATH 108 or sufficiently high score on SAT, ACT, or math placement test. It is recommended that MATH 137 be taken within two years of passing MATH 108 or its equivalent. MATH 137 is not sufficient preparation for MATH 170. Students intending to take MATH 170 should enroll in MATH 143 instead. Required test scores can be found here: http://www.uidaho.edu/registrar/registration/placement.

MATH 143 College Algebra
3 credits
Gen Ed: Mathematics
Carries no credit after MATH 160 or MATH 170; carries 2 credits after MATH 137. Algebraic, exponential, logarithmic functions; graphs of conics; zeros of polynomials; systems of equations, induction. Taught using the Polya Math Center, a studio environment featuring group study, one-to-one interaction with instructors, computer-mediated modules, and lectures.
Prereq: Sufficient score on SAT, ACT, or math placement test; or MATH 108 with grade of C or better. It is recommended that MATH 143 be taken within two years of passing MATH 108 or its equivalent. Required test scores can be found here: http://www.uidaho.edu/registrar/registration/placement.

MATH 144 Analytic Trigonometry
1 credit
Not open for cr to students who have previous high school or college cr in trigonometry. Trigonometric functions, inverse functions, applications. Taught using the Polya Math Center, a studio environment featuring group study, one-to-one interaction with instructors, computer-mediated modules, and lectures.
Prereq: Sufficient score on SAT, ACT, or math placement test. Students may qualify by enrolling concurrently in MATH 143 or MATH 170. Required test scores can be found here: http://www.uidaho.edu/registrar/registration/placement.

MATH 160 Survey of Calculus
4 credits
Gen Ed: Mathematics
Carries no credit after MATH 170. Overview of functions, and graphs, derivatives, integrals, exponential and logarithmic functions, functions of several variables, and differential equations. Primarily for students who need only one semester of calculus, such as students in business or architecture.
Prereq: Sufficient score on SAT, ACT, or math placement test, or MATH 137 with a C or better, or MATH 143 with a C or better. Required test scores can be found here: http://www.uidaho.edu/registrar/registration/placement.

MATH 170 Calculus I
4 credits
Gen Ed: Mathematics
Carries 2 credits after MATH 160. Functions, limits, continuity, differentiation, integration, applications, differentiation and integration of transcendental functions. Primarily for students in engineering, mathematics, science or computer science.
Prereq: MATH 143 (with a grade of C or better) and MATH 144 (concurrent enrollment in MATH 144 is allowed although it is recommended that students complete MATH 144 before enrolling in MATH 170); or demonstrated proficiency through a sufficiently high score on the ACT, SAT, or math placement test. Required test scores can be found here: http://www.uidaho.edu/registrar/registration/placement.

MATH 175 Calculus II
4 credits
Gen Ed: Mathematics
Differentiation and integration of transcendental functions, integration techniques, general mean value theorem, numerical techniques, and series.
Prereq: MATH 170 with a grade of C or better.

MATH 176 Discrete Mathematics
3 credits
Induction, set theory, graph theory, number systems, Boolean algebra, and elementary counting.
Prereq: MATH 143 or sufficiently high score on SAT, ACT, or math placement test. Required test scores can be found here: http://www.uidaho.edu/registrar/registration/placement.

MATH 204 (s) Special Topics
Credit arranged.

MATH 215 Proof via Number Theory
3 credits
An introduction to mathematical thinking and proof through the development of the basic results of elementary number theory. Emphasis on techniques of mathematical proofs, reading and writing proofs, and fundamental mathematical structures.
Prereq: MATH 175 and MATH 176.

MATH 275 Calculus III
3 credits
Gen Ed: Mathematics
Vectors, functions of several variables, and multiple integration.
Prereq: MATH 175.

MATH 299 (s) Directed Study
Credit arranged.

MATH 310 Ordinary Differential Equations
3 credits
Classification, initial and boundary value problems of one variable, exact equations, methods of solving higher-order linear equations, second-order equations with constant coefficient, series solutions, systems of linear equations, Laplace transforms, and existence theorems. Recommended preparation: MATH 275.
Prereq: MATH 175.

MATH 315 HON:Topics in Pure Mathematics
3 credits
A topic selected each yr that develops skill and appreciation for theoretical nature of mathematics.
Prereq: Permission of director of University Honors Program.

MATH 330 Linear Algebra
3 credits
Linear equations, matrices, linear transformations, eigenvalues, diagonalization; applications. Recommended Preparation: MATH 175.
Prereq: MATH 160 or MATH 170.

MATH 371 Mathematical Physics
3 credits
Cross-listed with PHYS 371
Mathematical techniques needed in upper-division physics courses, including vector analysis, matrices, Sturm-Liouville problems, special functions, partial differential equations, complex variables.
Prereq: PHYS 212/PHYS 212L and MATH 275.

MATH 376 Discrete Mathematics II
3 credits
Selected topics from discrete mathematics such as graph theory, modeling, and optimization. Recommended for computer science majors.
Prereq: MATH 176 or Permission.

MATH 385 Theory of Computation
3 credits
Cross-listed wtih CS 385
Mathematical models of computation, including finite automata and Turing machines. (Fall only)
Prereq: Permission.

MATH 386 Theory of Numbers
3 credits
Second course on number theory, including a historical treatment of efforts to answer basic questions on the density and possible forms of prime numbers. Topics may include: quadratic reciprocity, cubic reciprocity, quadratic forms, genus theory, higher reciprocity laws, Hilbert class field, the prime number theorem, Dirichlet's theorem on primes in an arithmetic progression, elliptic curves, and modular forms.
Prereq: MATH 215 .

MATH 388 History of Mathematics
3 credits
Cross-listed with HIST 388.
History of the development of mathematical ideas from ancient cultures to the present, including the relationship of those ideas to the cultures that produced them as well as an understanding of the mathematics involved. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 175 or Permission .

MATH 390 Axiomatic Geometry
3 credits
Development of Euclidean and hyperbolic geometry using the axiomatic approach. Recommended Preparation: MATH 215.
Prereq: High school geometry and MATH 176, or Instructor Permission .

MATH 391 Modern Geometry
3 credits
Euclidean and non-Euclidean geometries, plus topics chosen from projective, transformational, and computational geometry. Recommended Preparation: MATH 215.
Prereq: High School Geometry and MATH 176, or Instructor Permission .

MATH 395 Analysis of Algorithms
3 credits
Cross-listed with CS 395
Measures of efficiency; standard methods and examples in the design, implementation, and analysis of algorithms. (Spring only)
Prereq: MATH 175 and CS 121.

MATH 400 (s) Seminar
Credit arranged.

MATH 404 (s) Special Topics
Credit arranged.

MATH 415 Cryptography
3 credits
Gen Ed: Senior Experience
Congruences, modular arithmetic, private-key cryptosystems, public-key cryptosystems, and applications. The role of modern mathematics in information age society.
Prereq: MATH 330 .

MATH 420 Complex Variables
3 credits
Complex numbers, elementary functions, derivatives, the residue theorem, conformal mappings, contour integration, infinite series, applications.
Prereq: MATH 275 .

MATH 426 Discrete Optimization
3 credits
Optimization on graphs, networks and flows, and related topics. Recommended Preparation: MATH 175.

MATH 427 Transformational Geometry
3 credits
Cross-listed with MTHE 527
Geometry concepts of congruence, parallelism, and similarity using rigid motions; the group structure of the collection of isometries and their matrix representations. For graduate credit, additional transformational approaches for calculus integration strategies are required. The course is of particular interest to secondary mathematics teaching majors.
Prereq: MATH 330 or equivalent .

MATH 428 Numerical Methods
3 credits
Cross-listed with ENGR 428, PHYS 428. Joint-listed with MATH 529.
Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications.
Prereq: MATH 310.

MATH 430 Advanced Linear Algebra
3 credits
Vector spaces, linear transformations, characteristic polynomial, eigenvectors, Hermitian and unitary operators, inner products, quadratic forms, Jordan canonical form, applications.
Prereq: MATH 215 and MATH 330 or Instructor Permission .

MATH 432 Numerical Linear Algebra
3 credits
Analysis of efficiency and accuracy of large linear algebra problems; special emphasis on solving linear equations and finding eigenvalues.
Prereq: MATH 275, MATH 330, and knowledge of a computer language.

MATH 435 (s) Topics in Applied Mathematics
Credit arranged
Topics chosen from fields of current interest in applied mathematics; inquire at the Department of Mathematics for a description of topics for future semesters.
Prereq: Permission.

MATH 437 Mathematical Biology
3 credits
Modeling biological phenomena, mostly through differential equations; mathematical topics include stability analysis and limit cycles for nonlinear ODE's, spatial diffusion and traveling waves for PDE's; biological topics include models of predator-prey systems, infectious diseases, and competition. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 310 or Permission.

MATH 438 Mathematical Modeling
3 credits
Topics in the use of mathematics to model phenomena from science, business, economics, and engineering.
Prereq: CS 120, MATH 310 and MATH 330, or Instructor Permission .

MATH 451 Probability Theory
3 Credits
Cross-listed with STAT 451
Random variables, expectation, special distributions (normal, binomial, exponential, etc.), moment generating functions, law of large numbers, central limit theorem. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: MATH 275, or Permission
Coreq: MATH 275.

MATH 452 Mathematical Statistics
3 credits
Cross-listed with STAT 452
Estimation of parameters, confidence intervals, hypothesis testing, likelihood ratio test, sufficient statistics. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: MATH 451 or Permission.

MATH 453 Stochastic Models
3 credits
Joint-listed with MATH 538, Cross-listed with STAT 453
Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 451 or Permission.

MATH 455 Applied Actuarial Science
1 credit
Risk problems on the actuarial exam. Graded P/F.
Prereq: MATH 451.

MATH 461 Abstract Algebra I
3 credits
Groups, rings, and fields. (Fall only)
Prereq: MATH 215 and MATH 330; or Permission .

MATH 462 Abstract Algebra II
3 credits
Groups, rings, and fields. (Spring only)
Prereq: MATH 461.

MATH 471 Introduction to Analysis I
3 credits
Topology of Euclidean n-space, limit and continuity, differentiation, integration. (Fall only)
Prereq: MATH 275 and MATH 215; or Permission .

MATH 472 Introduction to Analysis II
3 credits
Topology of Euclidean n-space, limit and continuity, differentiation, integration. (Spring only)
Prereq: MATH 471 or Permission .

MATH 476 Combinatorics
3 credits
Elementary counting methods, generating functions, recurrence relations, Polya's enumeration, enumeration of graphs, trees, searching, combinatorial algorithms. Recommended Preparation: MATH 176, or MATH 215, or MATH 376.
Prereq: MATH 175 and MATH 330.

MATH 480 Partial Differential Equations
3 credits
Intro to Fourier analysis, application to solution of partial differential equations; classical partial differential equations of engineering and physics.
Prereq: MATH 310 or Permission.

MATH 494 Seminar in Mathematical Biology
1 credit
Oral presentation of research approaches, research results and literature review of mathematical biology including mathematical modeling of biological systems. Cooperative: open to WSU degree-seeking students.

MATH 499 (s) Directed Study
Credit arranged.

MATH 500 Master's Research and Thesis
Credit arranged.

MATH 501 (s) Seminar
Credit arranged.

MATH 502 (s) Directed Study
Credit arranged.

MATH 504 (s) Special Topics
Credit arranged.

MATH 505 (s) Professional Development
Credit arranged
Cr earned in this course will not be accepted toward grad degree programs.
Prereq: Permission.

MATH 510 Seminar on College Teaching of Mathematics
1 credit
Development of skills in the teaching of college mathematics; includes structure of class time, test construction, and various methods of teaching mathematics; supervision of teaching assistants in their beginning teaching assignments. Graded P/F.
Prereq: Permission.

MATH 521 Topology I
3 credits
Basic concepts of point set and algebraic topology. Cooperative: open to WSU degree-seeking students.

MATH 522 Topology II
3 credits
Basic concepts of point set and algebraic topology.

MATH 523 Algebraic Topology I
3 credits
Basic homotopy theory, covering spaces, homology theory, and applications.

MATH 528 Differentiable Manifolds
3 credits
Fundamentals of smooth manifolds, tangent spaces, vector fields, Lie groups, integration on manifolds, and applications. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 521 and MATH 472.

MATH 529 Numerical Methods
3 credits
Cross-listed with PHYS 528. Joint-listed with MATH 428.
Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications. Additional projects and/or assignments required for graduate credit in PHYS 528.
Prereq: MATH 310.

MATH 531 Complex Variables
3 credits
Theory of functions of a complex variable. Cooperative: open to WSU degree-seeking students.

MATH 535 Real Variables
3 credits
Measure and integration theory for functions of one or several variables.

MATH 536 Probability Theory
3 credits
Random variables, characteristic functions, convergence theorems, central limit theorem, conditional probability, and stochastic processes as developed from a measure theoretic basis.
Prereq: MATH 535 or Permission.

MATH 538 Stochastic Models
3 credits
Joint-listed with MATH 453, Cross-listed with STAT 544
Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 451 or Permission.

MATH 539 Theory of Ordinary Differential Equations
3 credits
Existence, uniqueness, and stability of solutions of first-order systems; other topics. Cooperative: open to WSU degree-seeking students.

MATH 540 Partial Differential Equations
3 credits
Existence and uniqueness theorems for the wave, heat, and Laplace's equations of physics; additional topics such as nonlinear models in mathematical biology, perturbation methods, etc. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 539 or Permission.

MATH 541 (s) Seminar in Analysis
1-3 credits, max arranged
Current literature. Cooperative: open to WSU degree-seeking students.

MATH 543 Approximation Theory
3 credits
Cooperative: open to WSU degree-seeking students.

MATH 555 Groups and Fields I
3 credits
Groups, fields, polynomials, Galois theory, representation theory. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 461 and MATH 462; or equivalent.

MATH 556 Groups and Fields II
3 credits
Groups, fields, polynomials, Galois theory, representation theory. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 555 or Permission .

MATH 557 Ring Theory
3 credits
Rings, ideals, modules, commutative algebra. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 461 and MATH 462; or equivalent .

MATH 558 Introduction to Algebraic Geometry
3 credits
Affine and projective varieties, morphisms, functions on varieties, birational maps, applications. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 557 or Permission .

MATH 559 Algebraic Number Theory
3 credits
Dedekind rings, algebraic integers, prime ideals and their splittings, decomposition group, inertia group, ideal class group, quadratic extensions and cyclotomic extensions. Some class field theory, including Frobenius automorphism, Artin automorphism, Hilbert class field, adeles and ideles.
Prereq: MATH 557 or permission.

MATH 561 (s) Seminar In Algebra
1-3 credits, max arranged
Current literature.

MATH 563 Mathematical Genetics
3 credits
Cross-listed with BIOL 563
Investigation of aspects of evolutionary biology with an emphasis on stochastic models and statistical methods; topics include: diffusion methods in molecular evolution, gene genealogies and the coalescent, inferring coalescent times from DNA sequences, population subdivision and F statistics, likelihood methods for phylogenic inference, statistical hypothesis testing, the parametric bootstrap. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 160 or MATH 170 and STAT 251 or STAT 301 .

MATH 571 Functional Analysis I
3 credits
Linear topological spaces and linear operators.
Prereq: MATH 535.

MATH 572 Functional Analysis II
3 credits
Linear topological spaces and linear operators.
Prereq: MATH 571.

MATH 575 Graph Theory I
3 credits
Basic concepts and theorems; topics include trees and connectivity, eulerian and hamiltonian graphs, graph colorings, matchings, graph decomposition, and extremal graph theory.

MATH 576 Graph Theory II
3 credits
Basic concepts and theorems; topics include trees and connectivity, eulerian and hamiltonian graphs, graph colorings, matchings, graph decomposition, and extremal graph theory.
Prereq: Instructor Permission.

MATH 578 Combinatorial Optimization
3 credits
Optimization problems on graphs, network flow problems, complexity analysis of algorithmic solutions, and related topics.

MATH 579 Combinatorics
3 credits
Topics from enumerative combinatorics, design theory, extremal combinatorics and algebraic combinatorics.

MATH 581 (s) Sem In Combinatorics
1-3 credits, max arranged.

MATH 583 Seminar in Applied Mathematics
3 credits, max arranged
Cooperative: open to WSU degree-seeking students.

MATH 596 MAT Comp Exam
1 credits
Supervised preparation for the Master of Arts in Teaching comprehensive exam. Graded Pass/Fail.

MATH 598 (s) Internship
Credit arranged.

MATH 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

MATH 600 Doctoral Research and Dissertation
Credit arranged.

MATHEMATICS EDUCATION (MTHE)

MTHE 235 Mathematics for Elementary Teachers I
3 credits
Mathematical development of arithmetic and problem solving as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk.
Prereq: MATH 143 or sufficient score on SAT, ACT, or COMPASS Math Test.

MTHE 236 Mathematics for Elementary Teachers II
3 credits
Mathematical development of informal geometry, problem solving, and probability and statistics as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk.
Prereq: MTHE 235 .

MTHE 301 Early Childhood Mathematics
4 credits
Focus on the mathematics for early childhood: numbers and operations, algebraic thinking, geometry, measurement, probability and statistics. Emphasis will be placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300 – level mathematics course in any major or minor in the College of Science.
Prereq: One general education math course .

MTHE 303 Early Childhood Math I
2 credits
Focus on the mathematics of early childhood: numbers and operations. Emphasis is placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300-level mathematics course in any major or minor in the College of Science. Recommended preparation: general education math course.

MTHE 304 Early Childhood Math II
2 credits
Focus on the mathematics of early childhood: algebraic reasoning, geometry, measurement, probability and statistics. Emphasis is placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300-level mathematics course in any major or minor in the College of Science. Recommended preparation: general education math course.

MTHE 409 Algebraic and Functional Reasoning
3 credits
Examines the understandings that are foundational to advanced algebraic concepts, and how grade 5-10 students develop these ideas. Topics include strategies for solving equations and systems, covariational reasoning, properties of linear, quadratic, exponential, and trigonometric functions.

MTHE 410 Proof and Viable Argumentation
3 credits
Develops viable argumentation as it can be found in grades 5-10 as a means of learning content, deepening understanding, and determining what is true and what is false mathematically. Topics include the language of argumentation, argument types, reasoning types, the distinction between proofs and viable arguments. Emphasizes how different argument types can contribute to student learning and increasing student discourse.

MTHE 513 Problem Solving Through History
3 credits
Historical study of approaches to solving problems in geometry, number theory, and set theory. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 514 Foundations of Calculus
3 credits
Real numbers, sequences, topology of the real numbers, continuous functions, differentiation, and integration; emphasis on developing the conceptual understanding needed to teach calculus in secondary school. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 515 Problems in Geometry
3 credits
Exploration of topics in geometry with emphasis on developing geometric reasoning and problem solving. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 516 Groups and Symmetry
3 credits
Exploration of groups, symmetry, and permutations. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

MTHE 519 (s) Special Topics
Credit arranged
Special topics of interest to mathematics teachers. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.
Prereq: Permission .

MTHE 527 Transformational Geometry
3 credits
Cross-listed with MATH 427.
Geometry concepts of congruence, parallelism, and similarity using rigid motions; the group structure of the collection of isometries and their matrix representations. For graduate credit, additional transformational approaches for calculus integration strategies are required. The course is of particular interest to secondary mathematics teaching majors.
Prereq: MATH 330 or equivalent .

MTHE 590 Seminar in Math Education
1-3 credits, max arranged
Topics in Mathematics Education. May be repeated for credit.
Cooperative: open to WSU degree-seeking students.

MECHANICAL ENGINEERING (ME)

ME 123 Introduction to Mechanical Design
3 credits
Introduction to engineering design process and analysis techniques including problem solving skills, development of software learning skills, graphical analysis, data analysis, and documentation skills. Three lec and one open 2-hr lab a wk. (Fall only)
Coreq: MATH 170.

ME 201 (s) Engineering Team Projects
2-3 credits, max arranged
Joint-listed with ME 401.
Students will be introduced to a systems approach to designing, building and delivering an interdisciplinary engineering project, with an emphasis on learning how to realize a project in an organized team environment. Projects are chosen at the discretion of the department. Additional project duties/assignments required for 400-level credit.
Prereq for ME 401: ME Certification and Permission .

ME 204 (s) Special Topics
Credit arranged.

ME 223 Mechanical Design Analysis
3 credits
Use of design and problem solving methodology to model requirements, conduct project learning, develop concepts, and realize prototypes. Projects feature elements of electromechanical design, rapid prototyping, and experimentation.
Prereq: ME 123
Coreq: MATH 175.

ME 299 (s) Directed Study
Credit arranged.

ME 301 Computer Aided Design Methods
3 credits
Engineering drawing literacy, pre-CAD planning, part modeling, assembly modeling, drawing package formulation, culminating team project involving virtual dissection and reassembly of a complex machine.
Prereq: ME 223.

ME 307 Group Mentoring I
1 credits
Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Students must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).
Prereq: Permission.

ME 308 Group Mentoring II
1 credit
Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Students must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).
Prereq: Permission.

ME 313 Dynamic Modeling of Engineering Systems
3 credits
Application of basic engineering principles to model and analyze the dynamic response of engineering systems; problem solutions will utilize transfer function methods, state variable techniques, and simulation software.
Prereq: ME 223, ENGR 220, ENGR 240, and MATH 310
Coreq: MATH 330 .

ME 322 Mechanical Engineering Thermodynamics
3 credits
Thermodynamic properties of substances, first and second laws of thermodynamics, thermodynamic analysis of mechanical engineering thermal components and cycles, psychrometric process, and introduction to combustion systems. (Fall only)
Prereq: CHEM 111/CHEM 111L and PHYS 211/PHYS 211L .

ME 325 Machine Component Design I
3 credits
Study of stress, deflection and stiffness, material properties, static and fatigue failure theory in the context of the analysis and design of machine components such as fasteners, welds, spring design and bearings. Significant use of solid modeling and use of equation solvers.
Prereq: ME 341 and MSE 201.

ME 330 Experimental Methods for Engineers
3 credits
Measurement systems and their application to engineering problems; topics include generalized performance of measurement systems, measuring and control devices, data acquisition and analysis, and report writing. Two lec and one 2-hr lab a wk.
Prereq: ENGR 240 .

ME 341 Intermediate Mechanics of Materials
3 credits
Mechanics of materials approach to: three-dimensional stress and strain, unsymmetrical bending, shear centers, curved beams, thick-walled pressure vessels, non-circular torsion; energy methods and advanced strength theories. Introduction to elementary kinematics. Significant use of solid modeling and use of equation solvers.
Prereq: ME 301 and Certification
Coreq: MSE 201 .

ME 345 Heat Transfer
3 credits
Transmission by conduction of heat in steady and unsteady states, by free and forced convection, and by radiation; combined effects of conduction, convection, and radiation.
Prereq: ME 322 and MATH 310
Coreq: ENGR 335 .

ME 398 (s) Engr Coop Internship I
Credit arranged
Supervised internship in professional engineering settings, integrating academic study with work experience; requires written report to be evaluated by a designated faculty member; details of coop to be arranged with ME Department before start of coop; cannot be counted as a technical elective. Graded P/F.
Prereq: Permission.

ME 399 (s) Engr Coop Internshp II
Credit arranged
Supervised internship in professional engineering settings, integrating academic study with work experience; requires written report to be evaluated by a designated faculty member; details of coop to be arranged with ME Department before start of coop; cannot be counted as a technical elective. Graded P/F.
Prereq: Permission.

ME 401 (s) Engineering Team Projects
2-3 credits, max arranged
Joint-listed with ME 201.
Students will be introduced to a systems approach to designing, building and delivering an interdisciplinary engineering project, with an emphasis on learning how to realize a project in an organized team environment. Projects are chosen at the discretion of the department. Additional project duties/assignments required for 400-level credit.
Prereq for ME 401: ME Certification and Permission.

ME 403 (s) Workshop
Credit arranged.

ME 404 (s) Special Topics
Credit arranged.

ME 407 Group Mentoring III
1 credit
Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Student must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).
Prereq: Permission.

ME 410 Principles of Lean Manufacturing
3 credit
Principles of lean manufacturing are introduced that provide a systematic process for identifying and eliminating non-value activities (waste) in production processes. Students learn these principles through a series of workshops, lectures, and hands-on simulations of lean principles. Three hours of lec and six hours of outside work per week.
Prereq: Senior standing in an engineering discipline or Permission.

ME 412 Gas Dynamics
3 credist
Compressible flow in ducts and nozzles, shock waves and expansion waves, and adiabatic two-dimensional compressible flow.
Prereq: MATH 310, ME 322 or ENGR 320, and ENGR 335.

ME 413 Engineering Acoustics
3 credits
Joint-listed with ME 513. Fundamentals of acoustics including wave theory; transmission through layers, generation and reception; low frequency models; application to sound measurement, transducers, loudspeaker cabinet design, and nondestructive testing; acoustic design project reqd. Additional projects/assignments reqd for grad cr.
Prereq: ENGR 240 or ECE 212, and MATH 310, or ME 313.

ME 414 HVAC Systems
3 credits
Joint-listed with ME 514.
Application of thermodynamics, heat transfer, and fluid flow to understanding the psychrometric performance of systems and equipment; evaluating the performance characteristics, advantages, and disadvantages of the various types of HVAC systems including large tonnage refrigeration/chiller equipment, cooling coils, cooling towers, ducts, fans, and heat pump systems; economics of system and equipment selection. Cooperative: open to WSU degree seeking students.
Prereq: ME 345.

ME 415 Materials Selection and Design
3 credits
Selection of materials for use in structural applications; consideration of environment, stress conditions, cost, and performance as guide to properties; optimization of choice of materials and fabrication methods; open-ended problems of real applications in various industries. Recommended Preparation: MSE 313 and MSE 456. (Spring only)
Prereq: MSE 201 and ENGR 350 .

ME 416 FE Exam Review
1 credit
Review of 10 essential topics on the Mechanical Engineering Fundamentals of Engineering exam, including preparation in each topic area based on online review sessions and solving sample problems. Graded P/F
Prereq: Senior Standing .

ME 417 Turbomachinery
3 credits
Joint-listed with ME 517
Introduction to the basic principles of modern turbomachinery. Emphasis is placed on steam, gas (combustion), wind and hydraulic turbines. Applications of the principles of fluid mechanics, thermodynamics and aerodynamics to the design and analysis of turbines and compressors are incorporated. Additional technical research report and presentation reqd for grad cr. Cooperative: open to WSU degree-seeking students (ME 517 only). Recommended Preparation: ENGR 320, ENGR 335.

ME 420 Fluid Dynamics
3 credits
Joint-listed with ME 520.
Credit not granted for both ME 420 and ME 520. A second fluid dynamics course featuring vector calculus and integral and differential forms of the conservation laws. Topics include fluid properties, fluid statistics, inviscid flow; conservation of mass, momentum, and energy; and turbulence. Other topics may be covered. Additional projects/assignments reqd for grad cr.
Prereq: ENGR 335, MATH 310, or Permission.

ME 421 (s) Advanced Computer Aided Design
3 credits
Use of solid modeling software for advanced component design, creation of complex multi-component assemblies, animation studies, and rendering. Course concludes with one month-long final project.
Prereq: ME 301
Coreq: ME 341.

ME 422 Applied Thermodynamics
3 credits
Advanced topics in applied thermodynamics including availability (exergy) analysis of systems, advanced power and refrigeration cycles, combustion, and thermodynamic properties of real fluids.
Prereq: ME 345.

ME 423 Human Factors and Ergonomics in Product Design
3 credits
Joint-listed with ME 523
Introduction to and application of Human Factors & Ergonomics Engineering principles in product design. Engineers design systems (e.g., work environments or products) where the human is an integral component. Human Factors & Ergonomics Engineering puts emphasis on how products should be designed so that they are safe, comfortable, and efficient for the human user. This course will focus on how body characteristics, physical and cognitive abilities, and the environment affect how products should be designed to accommodate the intended user(s). Additional projects/assignments are required for graduate credit.
Prereq: Senior standing in the College of Engineering; or Permission .

ME 424 Mechanical Systems Design I
3 credits
Gen Ed: Senior Experience
Study of production realization including project planning, concept design, detail design, and manufacturing processes with multiple realistic constraints. Concepts learned are applied to a two-semester, capstone design project. The project is continued in ME 426. (Fall only)
Prereq: ME 301, ME 313, ME 325, ME 330, ME 345, and Certification .

ME 426 Mechanical Systems Design II
3 credits
Gen Ed: Senior Experience
Continuation of each two-semester, capstone design project that was started in ME 424. (Spring only)
Prereq: ME 424 .

ME 430 Senior Lab
3 credits
Detailed lab investigation of engineering problem; statistical design of experiments; application of engineering principles to analyze experimental data; technical report writing; oral communication skills. One lec and four hrs of lab a wk.
Prereq: ME 313 and ME 330.

ME 433 Combustion Engine Systems
3 credits
Theory and characteristics of combustion engines; combustion process analysis; fuels, exhaust emissions and controls; system analysis and modeling.
Coreq: ME 345 or Permission.

ME 435 Thermal Energy Systems Design
3 credits
Application of fluid mechanics, thermodynamics and heat transfer in the design of thermal energy systems; topics include thermal energy system component analysis and selection, component and system simulation, dynamic response of thermal systems, and system optimization.
Prereq: ME 345.

ME 436 Sustainable Energy Sources and Systems
3 credits
An introduction to renewable energy conversion. Topics include: solar thermal, solar photovoltaic, and wind energy. Cooperative: open to WSU degree seeking students.
Prereq: ME 345 .

ME 438 Sustainability and Green Design
3 credits
Joint-listed with ME 538.
Understanding the Concept of Sustainability, Industrial Ecology and Sustainable Engineering, Metabolic Analysis, Sustainable Engineering, Design for Environment and Sustainability, Life Cycle Assessment, Energy & Water and Industrial Ecology, The status of Resources, Sustainable Engineering and Economics Development. Cooperative: open to WSU degree seeking students.
Prereq: MATH 310 .

ME 450 Fundamentals of Computational Fluid Dynamics
3 credits
Governing equations of fluid flow; fundamentals of turbulence modeling; accuracy and stability of discretization schemes; verification and validation; boundary and initial conditions; grid generation; CFD post-processing. Application of CFD software (ANSYS FLUENT) through five hands-on CFD Labs including internal viscous pipe flows, external flows over a 2D airfoil and a circular cylinder, and flows in a 2D driven cavity.
Prereq: ENGR 335 and MATH 330 .

ME 451 Experimental Methods in Fluid Dynamics
3 credits
Joint-listed with ME 551.
The objective of this course is to develop the knowledge and skills to be able to design and perform fluid dynamics experiments (and experiments in related areas) and to interpret and report the results. Learn the words, the concepts, and experimental skills in areas including dimensional analysis and scaling of experiments, flow visualization, velocity and flow rate measurements, turbulence measurements, and sediment sizing and transport measurements. Additional projects/assignments reqd for grad cr. One 1-1/2 hr lec and one 3-hr lab a wk. Recommended Preparation: ENGL 317 and ENGR 335.

ME 452 TechVentures: High Technology Entrepreneurship
3 credits
Joint-listed with ME 552.
TechVentures teaches students how to startup a technology company. Topics are (a) self-management, (b) product design, (c) marketing, (d) finance, and (e) organizational design. This project-based course is open to all majors. One extra project is required for graduate credit.
Prereq: Junior Standing and Permission .

ME 458 Finite Element Applications in Engineering
3 credits
Joint-listed with ME 558.
The finite element method is an essential tool for the design and research activities performed in engineering companies and academic institutions. The goal of this course is to introduce students to the use of the finite element method by focusing on a range of engineering applications and employing an interactive commercial finite element code. Students will learn how to solve various problems from several mechanical engineering areas including solid mechanics, heat transfer and fluid mechanics. When available, analytical solutions will be compared with the finite element solutions for validation purposes. Cooperative: open to WSU degree seeking students (ME 558 only).
Prereq: ME 322 (or ENGR 320) and ENGR 350
Coreq: ME 341 or instructor permission .

ME 461 Fatigue and Fracture Mechanics
3 credits
Fracture mechanics approach to structural integrity, fracture control, transition temperature, microstructural and environmental effects, fatigue and failure analysis.
Prereq: MSE 201 and ENGR 350.

ME 464 Robotics: Kinematics, Dynamics, and Control
3 credits
Joint-listed with ME 564
Mathematical analysis applied to spatial robotics including: Rigid body motion using screw theory, forward and inverse kinematics, analyses of forces and velocities using the manipulator Jacobian, serial and parallel chains, robot dynamics and simulation, nonlinear control and adaptive control, and Lyapunov stability theory. Additional projects/assignments required for graduate credit. Recommended Preparation: CS 120.
Prereq: MATH 310, MATH 330, and ME 313 or Equivalent, ME 330 .

ME 472 Mechanical Vibrations
3 credits
Free and forced vibration of single and multiple degree of freedom systems; response of mechanical systems to inputs of varying complexity, ranging from single frequency to pseudo-random; applications to mechanical design and vibration control. Cooperative: open to WSU degree-seeking students.
Prereq: ENGR 220, MATH 310, and ME 313; or graduate standing.

ME 481 Control Systems
3 credits
Cross-listed with ECE 470.
Analysis and design of feedback control systems using frequency and time domain methods, and computer-aided design tools. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 330
Prereq for Electrical Engineering and Computer Engineering majors: ECE 350
Prereq for Mechanical Engineering majors: ME 313.

ME 490 Solid Modeling, Simulation and Manufacturing Capstone
3 credits Use of solid modeling software focused on preparation for certification examinations, introduction to multi-physics numerical simulation, and computer aided manufacturing (CAM). A major final project is required. (Fall only)
Prereq: Permission .

ME 499 (s) Directed Study
Credit arranged
Selected topics. Detailed report reqd.
Prereq: Senior standing and Permission.

ME 500 Master's Research and Thesis
Credit arranged.

ME 501 (s) Seminar
Credit arranged.

ME 502 (s) Directed Study
Credit arranged
Supervised study, including critical reading of current literature.
Prereq: Permission.

ME 503 (s) Workshop
Credit arranged.

ME 504 (s) Special Topics
Credit arranged.

ME 505 (s) Professional Development
Credit arranged.

ME 513 Engineering Acoustics
3 credits
Joint-listed with ME 413. Cross-listed with ECE 579.
Fundamentals of acoustics including wave theory; transmission through layers, generation and reception; low frequency models; application to sound measurement, transducers, loudspeaker cabinet design, and nondestructive testing; acoustic design project reqd. Additional projects/assignments reqd for grad cr. Cooperative: open to WSU degree-seeking students.
Prereq: ENGR 240 or ECE 212, and MATH 310, or ME 313.

ME 514 HVAC Systems
3 credits
Joint-listed with ME 414.
Application of thermodynamics, heat transfer, and fluid flow to understanding the psychrometric performance of systems and equipment; evaluating the performance characteristics, advantages, and disadvantages of the various types of HVAC systems including large tonnage refrigeration/chiller equipment, cooling coils, cooling towers, ducts, fans, and heat pump systems; economics of system and equipment selection. Cooperative: open to WSU degree seeking students.
Prereq: ME 345.

ME 517 Turbomachinery
3 credits
Joint-listed with ME 417
Introduction to the basic principles of modern turbomachinery. Emphasis is placed on steam, gas (combustion), wind and hydraulic turbines. Applications of the principles of fluid mechanics, thermodynamics and aerodynamics to the design and analysis of turbines and compressors are incorporated. Additional technical research report and presentation reqd for grad cr. Cooperative: open to WSU degree-seeking students (ME 517 only). Recommended Preparation: ENGR 320, ENGR 335.

ME 519 Fluid Transients
3 credits
Cross-listed with CE 519.
Development of concepts and modeling techniques for unsteady flow of liquid and gas in piping systems; extensive computer programming used to develop tools for analysis, design, and control of transients. (Alt/yrs)
Prereq: MATH 310 and ENGR 335. A minimum grade of 'C' or better is required for all pre/coreqs.

ME 520 Fluid Dynamics
3 credits
Joint-listed with ME 420. Cross-listed with CE 520.
Credit not granted for both ME 420 and ME 520. A second fluid dynamics course featuring vector calculus and integral and differential forms of the conservation laws. Topics include fluid properties, fluid statistics, inviscid flow; conservation of mass, momentum, and energy; and turbulence. Other topics may be covered. Additional projects/assignments reqd for grad cr.
Prereq: ENGR 335, MATH 310, or Permission.

ME 521 Design Synthesis with Solid Modeling
3 credits
Use of solid modeling in the design synthesis process that focuses on optimized designs, reverse engineering to understand design intent, and aesthetics. Course concludes with one month-long final project.
Prereq: Graduate Standing or ME 421 .

ME 523 Human Factors and Ergonomics in Product Design
3 credits
Joint-listed with ME 423
Introduction to and application of Human Factors & Ergonomics Engineering principles in product design. Engineers design systems (e.g., work environments or products) where the human is an integral component. Human Factors & Ergonomics Engineering puts emphasis on how products should be designed so that they are safe, comfortable, and efficient for the human user. This course will focus on how body characteristics, physical and cognitive abilities, and the environment affect how products should be designed to accommodate the intended user(s). Additional projects/assignments are required for graduate credit.
Prereq: Senior standing in the College of Engineering; or Permission .

ME 525 Advanced Heat Transfer
3 credits
Study of major chemical and physical principles affecting properties of solid state engineering materials. Topics include bonding, carrier statistics, band-gap engineering, optical and transport properties, novel materials systems, characterization, magnetism, and comprehensive introduction to physics of solid state devices. Cooperative: open to WSU degree-seeking students.
Prereq: Permission.

ME 527 Thermodynamics
3 credits
Thermodynamic laws for design and optimization of thermodynamic systems, equations of state, properties of ideal and real fluids and fluid mixtures, stability, phase equilibrium, chemical equilibrium, applications of thermodynamic principles. Cooperative: open to WSU degree-seeking students.
Prereq: ME 322 or ENGR 320 or Permission.

ME 529 Combustion and Air Pollution
3 credits
Formation of pollutants during combustion processes and their subsequent transformations in the atmosphere; emphasis on the effects of design and operating parameters of combustion devices on the nature and composition of exhaust gases, improvements, post-combustion treatment of effluent gases, atmospheric chemistry, transport of pollutants, smog formation, acid rain, ozone formation and destruction.
Prereq: ENGR 320 and ENGR 335, ME 345 or Permission.

ME 538 Sustainability and Green Design
3 credits
Joint-listed with ME 438.
Understanding the Concept of Sustainability, Industrial Ecology and Sustainable Engineering, Metabolic Analysis, Sustainable Engineering, Design for Environment and Sustainability, Life Cycle Assessment, Energy & Water and Industrial Ecology, The status of Resources, Sustainable Engineering and Economics Development. Cooperative: open to WSU degree seeking students.
Prereq: MATH 310 .

ME 539 Advanced Mechanics of Materials
3 credits
Cross-listed with CE 510 and MSE 539.
Limitations of results of elementary mechanics of materials, complex situations of loading and structural geometry, applications to design of machines and structure, introduction to elasticity. Cooperative: open to WSU degree-seeking students.
Prereq: ME 341 or CE 342 .

ME 540 Continuum Mechanics
3 credits
Stress and deformation of continua using tensor analysis; relationship between stress, strain, and strain rates in fluids and solids; applications. Cooperative: open to WSU degree seeking students.
Prereq: Permission .

ME 541 Mechanical Engineering Analysis
3 credits
Mathematical modeling and solutions to mechanical engineering problems; analytical solutions to linear heat and mass diffusion, waves and vibrations; introduction to approximate techniques. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 330 and MATH 310 or Equivalent.

ME 544 Conduction Heat Transfer
3 credits
Formulation of steady-state and transient one- and multi-dimensional heat conduction problems; analytical solution techniques for linear problems including separation of variables, integral transforms, and Laplace transforms.
Prereq: ME 345 or equivalent, or Permission.

ME 547 Thermal Radiation Processes
3 credits
Thermal radiation; radiation interchange among surfaces; radiation in absorbing-emitting gases; combined modes of heat transfer.
Prereq: ME 345 or Permission.

ME 548 Elasticity
3 credits
Mathematical analysis of strain and stress, including vectors, tensors, and coordinate transformations; equations of elasticity; stress problems involving extension, torsion, and flexure; theories of failure.
Prereq: ME 341 or CE 342.

ME 549 Finite Element Analysis
3 credits
Cross-listed with CE 546.
Formulation of theory from basic consideration of mechanics; applications to structural engineering, solid mechanics, soil and rock mechanics; fluid flow. Cooperative: open to WSU degree seeking students.
Prereq: ME 341 or CE 342.

ME 550 Advanced Computation Fluid Dynamics
3 credits
Navier-Stokes and energy equations of fluid flow; advanced turbulence models; multiphase models; direct numerical simulations; advanced numerical methods; solution verification and validation; advanced CFD techniques; grid generation for complex geometries; CFD post-processing; fluid-structure interaction. Application of CFD software through hands-on CFD Labs including OpenFoam solutions to canonical flows studied in ME 450 and ANSYS Multiphysics or OpenFoam solutions to 2D free-surface flows, heat transfer of a 3D insulated box, sliding and dynamic meshes for two cars crossing each other, and fluid-structure interaction for a 2D balloon. Cooperative: open to WSU degree seeking students.
Prereq: ME 450.

ME 551 Experimental Methods in Fluid Dynamics
3 credits
Joint-listed ME 450. Cross-listed with CE 550.
Governing equations of fluid flow; fundamentals of turbulence modeling; accuracy and stability of discretization schemes; verification and validation; boundary and initial conditions; grid generation; CFD post-processing. Application of CFD software (ANSYS FLUENT) through five hands-on CFD Labs including internal viscous pipe flows, external flows over a 2D airfoil and a circular cylinder, and flows in a 2D driven cavity. Additional projects/assignments required for graduate credits. Cooperative: open to WSU degree seeking students.
Prereq: ENGR 335 and MATH 330 .

ME 552 TechVentures: High Technology Entrepreneurship
3 credits
Joint-listed with ME 452.
TechVentures teaches students how to startup a technology company. Topics are (a) self-management, (b) product design, (c) marketing, (d) finance, and (e) organizational design. This project-based course is open to all majors. One extra project is required for graduate credit.
Prereq: Junior Standing and Permission .

ME 558 Finite Element Applications
3 credits
Joint-listed with ME 458.
The finite element method is an essential tool for the design and research activities performed in engineering companies and academic institutions. The goal of this course is to introduce students to the use of the finite element method by focusing on a range of engineering applications and employing an interactive commercial finite element code. Students will learn how to solve various problems from several mechanical engineering areas including solid mechanics, heat transfer and fluid mechanics. When available, analytical solutions will be compared with the finite element solutions for validation purposes. Cooperative: open to WSU degree seeking students (ME 558 only).
Prereq: ME 322 (or ENGR 320) and ENGR 350
Coreq: ME 341 or instructor permission .

ME 564 Robotics: Kinematics, Dynamics, and Control
3 credits
Joint-listed with ME 464
Mathematical analysis applied to spatial robotics including: Rigid body motion using screw theory, forward and inverse kinematics, analyses of forces and velocities using the manipulator Jacobian, serial and parallel chains, robot dynamics and simulation, nonlinear control and adaptive control, and Lyapunov stability theory. Additional projects/assignments required for graduate credit. Recommended Preparation: CS 120.
Prereq: MATH 310, MATH 330, and ME 313 or Equivalent, ME 330 .

ME 571 Building Performance Simulation for Integrated Design
3 credits
Cross-listed with ARCH 574
This course focuses on design decisions that impact energy, thermal, visual and acoustic comfort with a strong emphasis on building simulation tools. This course provides students with the understanding of the nature of building thermal comfort, building envelope behavior, ventilation requirements, indoor air quality, passive cooling systems, energy conservation, and the importance of iterative building simulation in achieving high performance buildings.

ME 580 Linear System Theory
3 credits
Cross-listed with ECE 572.
Linear spaces and linear operators; descriptions of dynamic systems; input-output descriptions; state-space concepts; canonical forms; controllability and observability; minimal realizations; application to control and general systems analysis; pole assignment; observers. Cooperative: open to WSU degree-seeking students.
Prereq: ECE 470 or Equivalent.

ME 583 Reliability of Engineering Systems
3 credits
Cross-listed with CE 541.
Fundamentals of reliability theory, system reliability analysis including common-mode failures and fault tree and event tree analysis, time-dependent reliability including testing and maintenance, propagation of uncertainty, human reliability analysis, practical applications in component and system design throughout the semester. Cooperative: open to WSU degree-seeking students.
Prereq: Permission.

ME 598 (s) Internship
Credits arranged.

ME 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

ME 600 Doctoral Research and Dissertation
Credit arranged.

MEDICAL SCIENCE (MEDS)

MEDS 400 (s) Seminar
Credit arranged..

MEDS 404 (s) Special Topics
Credit arranged.

MEDS 499 (s) Directed Study
Credit arranged.

MEDS 501 (s) Seminar
Credit arranged.

MEDS 502 (s) Directed Study
Credit arranged
Areas normally offered are directed dissection of the extremities, trunk, head, neck, abdomen, and pelvis; endocrinology, physiology, and other medically related studies. (Spring only)

MEDS 504 (s) Special Topics
Credit arranged.

MEDS 506 Introduction to Primary & Continuity Care Clerkship
4 credits
Introduces medical students to continuity of care by working with practicing physicians and coinciding with instruction in communication skills, interviewing techniques, physical examinations, documentation, and clinical reasoning. Includes hospital-based patient encounters with an introduction to and the development of the physician role. Topics covered in primary and preventative care, geriatrics, rehabilitation, palliative care, behavioral health, and pain management. Pass/Fail only. Offered Fall
Prereq: Admission to the University of Washington School of Medicine WWAMI program.

MEDS 507 Introduction to Primary & Continuity Care Clerkship
4 credits
Introduces medical students to continuity of care by working with practicing physicians and coinciding with instruction in communication skills, interviewing techniques, physical examinations, documentation, and clinical reasoning. Includes hospital-based patient encounters with an introduction to and the development of the physician role. Topics covered in primary and preventative care, geriatrics, rehabilitation, palliative care, behavioral health, and pain management. Pass/Fail only. Offered Fall
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 508 Introduction to Primary & Continuity Care Clerkship
4 credits
Introduces medical students to continuity of care by working with practicing physicians and coinciding with instruction in communication skills, interviewing techniques, physical examinations, documentation, and clinical reasoning. Includes hospital-based patient encounters with an introduction to and the development of the physician role. Topics covered in primary and preventative care, geriatrics, rehabilitation, palliative care, behavioral health, and pain management. Pass/Fail only. Offered Spring
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 509 Introduction to Primary & Continuity Care Clerkship
4 credits
Introduces medical students to continuity of care by working with practicing physicians and coinciding with instruction in communication skills, interviewing techniques, physical examinations, documentation, and clinical reasoning. Includes hospital-based patient encounters with an introduction to and the development of the physician role. Topics covered in primary and preventative care, geriatrics, rehabilitation, palliative care, behavioral health, and pain management. Pass/Fail only. Offered Fall
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 510 Molecular and Cellular Basis of Disease
11 credits
Introduces cell physiology and cell biology, function, genetics, and genetic diseases, genes. Topics include membrane physiology; sensory receptors; muscle energetics and contractibility; autonomic nervous system; tissue response to disease; pharmacodynamics and pharmacokinetics; genetic disorders; pharmacogenetics. Incorporates relevant fundamental principles in anatomy, pathology and pharmacology. Graded Pass/Fail. (Fall only)
Prereq: *Admission to the University of Washington School of Medicine WWAMI program* .

MEDS 515 Ecology of Health & Medicine-Foundations 1
1 credit
This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Pass/Fail only. Fall and Spring
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 517 Research Methods
6 credits
Community health and disease, including assessment of disease risk and mechanisms of epidemic detection, spread, and control; interpretation of research design, data analysis, bias source; and clinical epidemiology, including evaluation and application of diagnostic tests, natural history of disease, and quantitative aids for clinical decision making. Course offered Summer. 6cr. Must be a WWAMI Medical Education Professional Student. (This course is the equivalent of MedSci 500 offered in Seattle)
Prereq: WWAMI Student .

MEDS 519 Invaders and Defenders
10 credits
This course covers the immune system, microbial biology, infectious diseases, inflammation and repair, and skin and connective tissue. Topics discussed include the pathogenesis and immunity of infectious disease, immunodeficiencies, hypersensitivity, autoimmunity, the basis of immunologic diagnosis. Additionally, this course will include relevant fundamental scientific principles in anatomy, pathology, and pharmacology. Graded Pass/Fail. (Fall only)
Prereq: *Admission to the University of Washington School of Medicine WWAMI program* .

MEDS 525 Ecology of Health & Medicine-Foundations 3
1 credit
This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Pass/Fail only. Fall and Spring
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 529 Circulatory System
16 credits
This course provides an interdisciplinary approach to cardiovascular, respiratory, and renal-urinary medicine, including anatomy, physiology, pathology, medicine and surgery. Topics include cardiac electrophysiology and cardiac muscle mechanics, myocardial infarction and cardiac repair, thoracic and pulmonary anatomy, ventilator mechanics, gas exchange, obstructive, restrictive, and pulmonary-vascular diseases, renal function, and common kidney diseases. Graded Pass/Fail. (Spring only)
Prereq: *Admission to the University of Washington School of Medicine WWAMI program* .

MEDS 536 Ecology of Health & Medicine-Foundations 3
1 credit
This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Pass/Fail only. Fall and Spring
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 540 Blood, Cancer & Musculoskeletal
8 credits
This course familiarizes students with the basic pathophysiologic mechanisms leading to disturbances of red cell, white cell, and platelet production, as well as abnormalities of hemostasis presenting clinical problems. The musculoskeletal content will focus on clinical manifestations in the musculoskeletal system and pathophysiology of trauma, aging, infection, and inflammation. Graded Pass/Fail. (Spring only)
Prereq: *Admission to the University of Washington School of Medicine WWAMI program* .

MEDS 545 Ecology of Health & Medicine-Foundations 4
1 credit
This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Pass/Fail only. Fall and Spring
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 550 Energetics and Homeostasis
10 credits
This course covers metabolism, nutrition, obesity, diabetes, gastrointestinal/liver physiology, and endocrinology. Topics include physiology and pathology of digestion and hepatic function, principles and practice of clinical nutrition, the endocrine integration of metabolism, and clinically important endocrine pathophysiology. Additionally, this course introduces anatomy, pathology, and pharmacology of the endocrine and GI Systems. Graded Pass/Fail. (Spring only)
Prereq: Admission to the University of Washington School of Medicine WWAMI program .

MEDS 560 Mind, Brain and Behavior
14 credits
In this course, the foundational principles of the organization and function of the head, neck and central nervous system are explained with a focus on clinical application of this knowledge to systematically approach the differential diagnosis and management of major neurologic, psychiatric and behavioral disorders. Current therapeutic approaches to disease are explained including pharmacological, behavioral, surgical and other therapies. Graded Pass/Fail. (Fall only)
Prereq: *Admission to the University of Washington School of Medicine WWAMI program* .

MEDS 570 Lifecycle and Reproduction
8 credits
This course will cover normal and abnormal human development, reproductive functions including formation and maturation of ova and sperm, menstruation, normal pregnancy, and labor and delivery. Provides information concerning infertility, family planning techniques, urinary disorders, reproductive aging and demography of human population. Additionally, this course includes fundamental scientific principles in pelvic anatomy, apthology, histology, imaging and pharmacology. Graded Pass/Fail. (Fall only)
Prereq: *Admission to the University of Washington School of Medicine WWAMI program* .

MEDS 580 Consolidation and Transition
12 credits
Reinforces content in the UWSOM foundations phase. Learning experiences will address key content areas which need further review identified throughout terms 1 and 2, with specific sessions developed as indicated; faculty/staff and peer educators will provide sessions for this basic science review as well as preparation for clerkships. Graded Pass/Fail. (Spring Only)
Prereq: Must be admitted to U of Washington School of Medicine.

MEDS 597 Graduate Practicum
1-3 credits, max 3.

MILITARY SCIENCE (MS)

MS 101 Intro to the Army & Critical Thinking
1 credit
Introduces Cadets to the personal challenges and competencies that are critical for effective leadership. Cadets learn how the personal development of life skills such as critical thinking, goal setting, time management, stress management, and comprehensive fitness relate to leadership, officership, and the Army profession. Labs include leader's reaction/ropes course, basic survival skills, drill and ceremony, and emergency preparedness. One lecture hour and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets .

MS 102 Intro to the Profession of Arms
1 credit
Overviews basic leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Cadets explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises. Labs include orienteering, a teambuilding exercise, first aid, cultural protection, and ethics problem solving. One lecture hour and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets.

MS 201 Foundations of Leadership I
2 credits
Develops leadership skills and introduces different leadership theories. Furthers personal development such as time management and effective communication and briefing skills. Cadets explore tactics and techniques such as troop leading procedures, tactical movement, problem solving, and land navigation. Labs deepen understanding of the leader's reaction/ropes course, basic survival skills, drill and ceremony, and emergency preparedness. Two lecture hours and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets.
Prereq: MS 102 or Permission .

MS 202 Foundations of Leadership II
2 credits
Examines the challenges of leading teams in the complex operational environment. The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. Prepares Cadets for third year MS classes. Cadets develop greater self awareness as they assess their own leadership styles and practice communication and team building skills. Case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. Labs deepen understanding of orienteering, teambuilding exercise, first aid, cultural protection, and ethics problem solving. Two lecture hours and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets.
Prereq: MS 201 or Permission .

MS 204 (s) Special Topics
Credit arranged
Prereq: Permission.

MS 227 American Military History
3 credits
Using lecture and small group discussions, this is a survey of the American military experience. Events are analyzed using the conventional discipline of historical methodology and the classical norms of the principles of warfare. Fulfills military history requirement for commissioning of cadets. Department permission required.

MS 298 (s) Internship
Credit arranged.

MS 299 (s) Directed Study
Credit arranged.

MS 301 Adaptive Team Leadership
3 credits
Challenges cadets to study, practice, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad tactical operations. Cadets receive systematic and specific feedback on their leadership attributes and actions. Based on such feedback, as well as their own self-evaluations, cadets continue to develop their leadership and critical thinking abilities. The focus is developing cadets' tactical leadership abilities to enable them to succeed at ROTC's summer Cadet Leader Course (CLC). Cadets help lead joint labs with the first two MS levels. Three lecture hours and one leadership lab hour.
Prereq: MS 202 or Permission. Permission may be granted to students who have attended Leadership Training Camp or Basic Training from any U.S. military branch of service .

MS 302 Applied Team Leadership
3 credits
Uses increasingly intense situations applying team leadership challenges to build cadet awareness and skills in leadership tactical operations at the small unit level. Cadets review aspects of full spectrum operations. They also conduct military briefings and develop proficiency in the operation orders process. The focus is on exploring, evaluating and developing skills in decision-making, persuading, and motivating team members in the contemporary operating environment. Cadets help lead joint labs with the first two MS levels. Three lecture hours and one leadership lab hour
Prereq: MS 301 or Permission. Permission may be granted to students who have attended Leadership Training Camp or Basic Training from any U.S. military branch of service .

MS 401 Mission Command and the Army Profession
3 credits
Explores the dynamics of leading in the complex situations of current military operations. Cadets will examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Cadets also explore aspects of interacting with non-government organizations, civilians on the battlefield, the decision making processes and host nation support. The course places significant emphasis on preparing Cadets for BOLC B and their first unit of assignment. It uses mission command case studies and scenarios to prepare you to face the complex ethical demands of serving as a commissioned officer in the United States Army. Three lecture hours and one leadership lab hour.
Prereq: MS 301, MS 302 .

MS 402 Mission Command and the Company Grade Officer
3 credits
Explores the dynamics of leading in complex situations during Unified Land Operations. It examines the Art of Command and how to properly communicate with your NCOs and Soldiers. During Cultural Awareness and Cultural Property Protection (CPP), they will discuss numerous situations on how ethical decisions impact personnel and the unit mission. Through the understanding of their roles and responsibilities, they will learn about Comprehensive Soldier Fitness (CSF), Being Ready and Resilient (R2C), and Individual and Family Readiness can assist them in preparing their Soldiers and their Families on reducing and managing stress during times of uncertainty. The course places significant emphasis on preparing Cadets for BOLC B and their first unit of assignment. It uses mission command case studies and scenarios to prepare them to face the complex ethical demands of serving as a commissioned officer in the United States Army. Three lecture hours and one leadership lab hour.
Prereq: MS 301, MS 302 .

MS 404 (s) Special Topics
Credit arranged.

MS 499 (s) Directed Study
Credit arranged.

MOVEMENT SCIENCES (MVSC)

MVSC 201 Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles
3 credits
Examines personal awareness and responsibility for maintenance of health, proper nutrition, fitness, and well-being. It teaches skills necessary for individual program development and implementation to effect positive health-related behavior change
Prereq: Major in Dance, Exercise Science and Health, Physical Education Teacher Education or Recreation.
Prereq or **Coreq:** PEP 100, PEP 161, REC 104, or DAN 101 .

MVSC 404 (s) Special Topics
Credit arranged.

MVSC 445 Internship Preparation and Professional Development
1 credit
This course explores the different factors that go into finding, obtaining, and getting the most out of an internship. Emphasis is placed on such skills related to understanding the student's chosen field/career path, professionalism, communication, and dealing with adversity in the work place.
Prereq: MVSC 201 .

MVSC 486 Healthy Active Lifestyle Assessment and Intervention
3 credits
Gen Ed: Senior Experience
Joint-listed with MVSC 586
Develops skills in leadership, assessment, planning and pedagogy to promote and deliver a healthy active lifestyles intervention for individuals, groups and/or communities. Lecture-lab. Students are required to work with an agency in the field as part of the lab hours.
Prereq: Junior, Senior or Graduate Student .

MVSC 570 Research in Physical Activity, Theory and Design
3 credits
To understand and apply principles of scientific inquiry using both quantitative and qualitative research methodology; and apply such principles through individual research projects in physical activity.

MVSC 580 Research: Writing and Dissemination
1 credit
Professional writing of research not directly related to a thesis or dissertation. (Spring only)
Prereq: MVSC 570.

MVSC 586 Healthy Active Lifestyle Assessment and Intervention
3 credits
Joint-listed with MVSC 486
Develops skills in leadership, assessment, planning and pedagogy to promote and deliver a healthy active lifestyles intervention for individuals, groups and/or communities. Lecture-lab. Students are required to work with an agency in the field as part of the lab hours.
Prereq: Junior, Senior or Graduate Student.

MVSC 610 Pedagogical Immersion in Movement Sciences
Credit arranged
This immersion course is designed to guide the learner in developing and improving effective pedagogical skills while teaching coursework to adults in university and/or community settings.
Prereq: Instructor Permission .

MVSC 611 Outreach and Engagement Immersion in the Movement Sciences
Credit arranged
This immersion course is designed to guide the learner in participating in and/or developing outreach, engagement and/or service activities to clients, communities, and/or professional organizations.
Prereq: Instructor Permission .

MVSC 612 Research Immersion in the Movement Sciences
Credit arranged
The research Immersion course is designed as a first exposure to doctoral non-dissertation research and a precursor to non-dissertation research, where the student collaborates with the major professor on implementing research.
Prereq: Instructor Permission .

MUSIC (MUSI)

MUSI 100 (s) Introduction to Music
3 credits
Gen Ed: Humanities, American Diversity
Not open for credit to majors. Introduction to the art and nature of music; emphasis on aural skills, historical styles, musical forms, and the literature of music.

MUSIC--APPLIED PERFORMANCE (MUSA)

Vertically-related courses in this subject field are: MUSA 145-MUSA 146-MUSA 245-MUSA 246.

MUSA 114 (s) Studio Instruction
1 credit, max arranged
For secondary or minor instrument, nonmajors, and undeclared majors; may not be taken for audit. Weekly instruction. Instruction offered in piano, organ, harpsichord, voice, flute, oboe, clarinet, saxophone, bassoon, trumpet, horn, euphonium, trombone, tuba, percussion, violin, viola, cello, contrabass, or guitar. Final exam conducted by jury in some sections.
Prereq: Audition or Permission .

MUSA 115 (s) Studio Instruction
2 credits, 8 max
For music majors. Review of fundamentals of technique and musicianship in preparation for MUSA 124 and MUSA 134. Maximum two semesters on the same instrument.
Prereq: *Placement audition by committee*.

MUSA 116 Concert Choir--Vandaleers
1 credit, max arranged
Joint-listed with MUSA 316, MUSA 516.
Open to all students. Students earning upper division and graduate credits will be held to higher standards. Field trips.
Prereq: Audition and Permission.

MUSA 117 (s) University Choir
1 credit, max arranged
Joint-listed with MUSA 317, MUSA 517.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 118 (s) Jazz Choir
1 credit, max arranged
Joint-listed with MUSA 318, MUSA 518.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 119 (s) Marching Band
1-3 credits, max arranged
Joint-listed with MUSA 319, MUSA 519.
Open to all students. Performance at home football games and other events and travel to selected away football games; field trips. Students earning upper division and graduate credits will be held to higher standards. (Fall only)

MUSA 120 (s) Wind Ensemble
1 credit , max arranged
Joint-listed with MUSA 320, MUSA 520.
Open to all students by audition. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 121 (s) Concert Band
1 credit, max arranged
Joint-listed with MUSA 321, MUSA 521
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 122 (s) Orchestra
1 credit, max arranged
Joint-listed with MUSA 322, MUSA 522.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.
Prereq: Audition and Permission.

MUSA 123 (s) Jazz Ensemble
1 credits, max arranged
Joint-listed with MUSA 323, MUSA 523
Open to all students. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 124 (s) Studio Instruction
2 credits, max arranged
Joint-listed with MUSA 324, MUSA 524.
For music majors in music degree programs other than performance; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.
Prereq: Placement audition by committee .

MUSA 134 (s) Studio Instruction
3 credits, max arranged
Joint-listed with MUSA 334, MUSA 534.
For music majors in the B.Mus. performance degree; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.
Prereq: Placement audition by committee .

MUSA 143 Piano Class for Non-Majors
1 credit
Beginning piano for non-majors. (Spring only)

MUSA 145 (s) Piano Class for Music Majors/Minors
1 credit
May not be taken for audit. The first semester of a four-semester beginning piano sequence. Two lec-labs a wk. (Fall only)
Prereq: Major or minor in the School of Music or Permission .

MUSA 146 Piano Class for Music Majors/Minors
1 credit
May not be taken for audit. The second semester of a four-semester beginning piano sequence. Two lec-labs a wk. (Spring only)
Prereq: "C" or better in MUSA 145 or Permission .

MUSA 147 Voice Class
1 credit
May not be taken for audit. For beginning singers. Two lec-labs a wk.

MUSA 153 Guitar Class
2 credits
Group instruction in guitar. May not be taken for audit.

MUSA 180 (s) Opera/Musical Theatre Studio
1-3 credits, max arranged
Joint-listed with MUSA 380, MUSA 580.
Analysis, rehearsal, and performance of operatic and musical theatre literature. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 200 (s) Seminar
Credit arranged.

MUSA 203 (s) Workshop
Credit arranged.

MUSA 204 (s) Special Topics
Credit arranged.

MUSA 210 Jazz Improvisation
2 credits
Overview of basic jazz improvisation with an emphasis on style and basic jazz theory. (Spring only)

MUSA 212 Introduction to Jazz Piano I
1credit
Interpretation of fake books and lead sheets in various styles including swing, blues, ballad, Latin and pop. Emphasis on chord voicings, comping, style, and basic improvisation. Recommended Preparation: Equivalent of 2 years piano instruction.

MUSA 213 Introduction to Jazz Piano II
1 credit
This course is designed to expand upon styles and techniques learned in Intro to Jazz Piano I.
Prereq: MusA 212.

MUSA 245 (s) Piano Class for Music Majors/Minors
1 credit.
May not be taken for audit. The third semester of a four-semester beginning piano sequence. Two lec-labs a wk. (Fall only)
Prereq: "C" or better in MUSA 146 .

MUSA 246 Piano Class for Music Majors/Minors
1 credit
May not be taken for audit. The fourth semester of a four-semester beginning piano sequence. Two lec-labs a wk. (Spring only) **Prereq:** "C" or better in MUSA 245 or Permission.

MUSA 299 (s) Directed Study
Credit arranged.

MUSA 314 (s) Studio Instruction
1 credit, max arranged

For secondary or minor instrument, nonmajors, and undeclared majors; may not be taken for audit. Weekly instruction. Instruction offered in piano, organ, harpsichord, voice, flute, oboe, clarinet, saxophone, bassoon, trumpet, horn, euphonium, trombone, tuba, percussion, violin, viola, cello, contrabass, or guitar. Final exam conducted by jury in some sections.
Prereq: Four semesters of MUSA 114, MUSA 124 or MUSA 134 on the same instrument or Permission .

MUSA 315 Collaborative Piano
1 credit, max arranged
Joint-listed with MUSA 515
Principles of collaborative piano; lab assignments under supervision.
Prereq: Audition and completion of semester of MUSA 124 or MUSA 134 .

MUSA 316 Concert Choir--Vandaleers
1 credit, max arranged
Joint-listed with MUSA 116, MUSA 516.
Open to all students. Students earning upper division and graduate credits will be held to higher standards. Field trips.
Prereq: Audition and Permission.

MUSA 317 (s) University Chorus
1 credit, max arranged
Joint-listed with MUSA 117, MUSA 517.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 318 (s) Jazz Choir
1 credit, max arranged
Joint-listed with MUSA 118, MUSA 518.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 319 (s) Marching Band
1-3 credits, max arranged
Joint-listed with MUSA 119, MUSA 519.
Open to all students. Performance at home football games and other events and travel to selected away football games; field trips. Students earning upper division and graduate credits will be held to higher standards. (Fall only)

MUSA 320 (s) Wind Ensemble
1 credit , max arranged
Joint-listed with MUSA 120, MUSA 520.
Open to all students by audition. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 321 (s) Concert Band
1 credit, max arranged
Joint-listed with MUSA 121, MUSA 521
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 322 (s) Orchestra
1 credit, max arranged
Joint-listed with MUSA 122, MUSA 522.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.
Prereq: Audition and Permission.

MUSA 323 (s) Jazz Ensemble
1 credits, max arranged
Joint-listed with MUSA 123, MUSA 523
Open to all students. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 324 (s) Studio Instruction
2 credits, max arranged
Joint-listed with MUSA 124, MUSA 524.
For music majors in music degree programs other than performance; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.
Prereq: Placement audition by committee .

MUSA 326 Pep Band
1 credit, max arranged
Open to all students. Performances at home basketball games and other events. Travel to conference tournament. Recommended Preparation: MUSA 119/MUSA 319/MUSA 519. (Spring only)
Prereq: Audition and Permission .

MUSA 334 (s) Studio Instruction
3 credits, max arranged
Joint-listed with MUSA 134, MUSA 534.
For music majors in the B.Mus. performance degree; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.
Prereq: Placement audition by committee .

MUSA 365 (s) Chamber Ensemble
1 credit, max arranged
Joint-listed with MUSA 565.
Open to all students. Performance opportunities in chamber ensembles: string, brass, woodwind, percussion, keyboard, vocal, and mixed. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission.

MUSA 380 (s) Opera/Musical Theatre Studio
1-3 credits, max arranged
Joint-listed with MUSA 180, MUSA 580.
Analysis, rehearsal, and performance of operatic and musical theatre literature. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 387 Conducting I
2 credits
Conducting techniques, score reading, and interpretation of scores for large choral and instrumental ensembles. (Fall only)
Prereq: MUSC 141.

MUSA 400 (s) Seminar
Credit arranged .

MUSA 403 (s) Workshop
Credit arranged .

MUSA 404 (s) Special Topics
Credit arranged.

MUSA 410 Advanced Jazz Improvisation
2 credits
Advanced study of jazz improvisation with an emphasis on advanced jazz theory, transcription, and developing facility in all keys. Additional projects/assignments required for graduate credit. (Fall only)
Prereq: MUSA 210 .

MUSA 455 Keyboard Performance Practices
1 credit
Cross-listed with MUSA 555.
Study of interpretation of keyboard music from Baroque through 20th century; learn to interpret scores, teach, and perform keyboard music stylistically; acquire knowledge of major performing artists and recordings from each period of music. Registration for graduate credit requires additional research into original treatises from each period of music, resulting in the editing of a piece of music from each of these periods. (Fall, Alt/even yrs).

MUSA 487 Conducting II
2 credits
(Spring only)
Prereq: MUSA 387 or Permission.

MUSA 490 Half Recital
0 credits

For students required to have one-half recital. Graded P/F.
Prereq: Audition and be enrolled in at least the second semester of MUSA 324 or MUSA 334 individual instruction and Permission
Coreq: MUSA 324 or MUSA 334.

MUSA 491 Recital
0 credits
Gen Ed: Senior Experience
For students required to have a full recital. May be repeated. Graded P/F.
Prereq: Audition and be enrolled in at least the third semester of MUSA 324 or MUSA 334 Individual Instruction and Permission
Coreq: MUSA 334.

MUSA 492 Elective Half Recital
0 credits
For students who wish to present an elective half recital. Graded P/F.
Prereq: Audition and Permission
Coreq: MUSA 324 or MUSA 334 .

MUSA 493 Elective Recital
0 credits
For students who and wish to present an elective full recital. Graded P/F.
Prereq: Audition and Permission
Coreq: MUSA 324 or MUSA 334 .

MUSA 499 (s) Directed Study
Credit arranged.

MUSA 500 Master's Research and Thesis
Credit arranged.

MUSA 501 (s) Seminar
Credit arranged.

MUSA 502 (s) Directed Study
Credit arranged.

MUSA 503 (s) Workshop
Credit arranged.

MUSA 504 (s) Special Topics
Credit arranged.

MUSA 505 (s) Professional Development
Credit arranged.

MUSA 514 (s) Studio Instruction
1 credit, max arranged
For secondary or minor instrument, nonmajors, and undeclared majors; may not be taken for audit. Weekly instruction. Instruction offered in piano, organ, harpsichord, voice, flute, oboe, clarinet, saxophone, bassoon, trumpet, horn, euphonium, trombone, tuba, percussion, violin, viola, cello, contrabass, or guitar. Final exam conducted by jury in some sections.

MUSA 515 Collaborative Piano
1 credit, max arranged
Joint-listed with MUSA 315
Principles of collaborative piano; lab assignments under supervision.
Prereq: Audition and completion of semester of MUSA 124 or MUSA 134 .

MUSA 516 Concert Choir--Vandaleers
1 credit, max arranged
Joint-listed with MUSA 116, MUSA 316.
Open to all students. Students earning upper division and graduate credits will be held to higher standards. Field trips.
Prereq: Audition and Permission.

MUSA 517 (s) University Chorus
1 credit, max arranged
Joint-listed with MUSA 117, MUSA 317.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 518 (s) Jazz Choir
1 credit, max arranged
Joint-listed with MUSA 118, MUSA 318.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 519 (s) Marching Band
1-3 credits, max arranged
Joint-listed with MUSA 119, MUSA 319.
Open to all students. Performance at home football games and other events and travel to selected away football games; field trips. Students earning upper division and graduate credits will be held to higher standards. (Fall only)

MUSA 520 (s) Wind Ensemble
1 credit , max arranged
Joint-listed with MUSA 120, MUSA 320.
Open to all students by audition. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 521 (s) Concert Band
1 credit, max arranged
Joint-listed with MUSA 121, MUSA 321
Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 522 (s) Orchestra
1 credit, max arranged
Joint-listed with MUSA 122, MUSA 322.
Open to all students. Students earning upper division and graduate credits will be held to higher standards.
Prereq: Audition and Permission.

MUSA 523 (s) Jazz Ensemble
1 credits, max arranged
Joint-listed with MUSA 123, MUSA 323
Open to all students. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 524 (s) Individual Instruction
2 credits, max arranged
Joint-listed with MUSA 124, MUSA 324.
For music majors in music degree programs other than performance; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.
Prereq: Placement audition by committee .

MUSA 534 (s) Individual Instruction
3 credits, max arranged
Joint-listed with MUSA 134, MUSA 334.
For music majors in the B.Mus. performance degree; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.
Prereq: Placement audition by committee .

MUSA 555 Keyboard Performance Practices
1 credit
Joint-listed with MUSA 455.
Study of interpretation of keyboard music from Baroque through 20th century; learn to interpret scores, teach, and perform keyboard music stylistically; acquire knowledge of major performing artists and recordings from each period of music. Registration for graduate credit requires additional research into original treatises from each period of music, resulting in the editing of a piece of music from each of these periods. (Fall, Alt/even yrs).

MUSA 565 (s) Chamber Ensemble
1 credit, max arranged
Joint-listed with MUSA 365.
Open to all students. Performance opportunities in chamber ensembles: string, brass, woodwind, percussion, keyboard, vocal, and mixed. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission.

MUSA 580 (s) Opera/Musical Theatre Studio
1-3 credits, max arranged
Joint-listed with MUSA 180, MUSA 380.
Analysis, rehearsal, and performance of operatic and musical theatre literature. Students earning graduate credit will be held to a higher standard.
Prereq: Audition and Permission .

MUSA 587 (s) Advanced Conducting
1-2 credits, max arranged
Advanced score study, baton technique, expressive gestures for conductors.
Prereq: Undergraduate conducting course.

MUSA 590 (s) Elective Master's Recital
0 credits
For students whose emphasis is other than performance. May be repeated. Graded P/F.
Prereq: Audition and Permission of committee
Coreq: MUSA 524 .

MUSA 591 (s) Required Master's Recital
0 credits
For students whose emphasis is in performance. May be repeated. Graded P/F.
Prereq: Audition and Permission of committee
Coreq: MUSA 524 or MUSA 534 .

MUSA 592 Final Master's Project
0 credits
Students in the Master of Music with a concentration in performance are required to write a document or present a lecture recital. Graded P/F.
Prereq: Permission of Committee .

MUSA 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

MUSIC--COMPOSITION AND THEORY (MUSC)

MUSC 139 Aural Skills I
2 credits
Exercises and drill in sight-singing and ear training. Three lec-labs a wk. Recommended coreq: MUSA 145. (Fall only)
Prereq: Permission.

MUSC 140 Aural Skills II
2 credits
Exercises and drill in sight-singing and ear training. Three lec-labs a wk. Recommended coreq: MUSA 146. (Spring only)
Prereq: "C" or better in MUSC 139.

MUSC 141 Theory of Music I
2 credits
Melodic and harmonic materials, part-writing skills, and analysis. (Fall only)
Prereq: Permission.

MUSC 142 Theory of Music II
2 credits
Harmonic materials, part-writing skills, and analysis. (Spring only)
Prereq: "C" or better in MUSC 141 or Permission.

MUSC 200 (s) Seminar
Credit arranged.

MUSC 203 (s) Workshop
Credit arranged.

MUSC 204 (s) Special Topics
Credit arranged.

MUSC 225 Composition
2 credits, max arranged
Joint-listed with MUSC 425, MUSC 525.
For Music Majors. The craft of musical composition, using original composition assignments to focus on common techniques used by past and contemporary composers and to develop skill in notation. Active participation and performance is emphasized. MUSC 425 and MUSC 525 increasingly emphasize varied media and larger forms, but with value being placed on creativity and originality. In MUSC 425 and MUSC 525, class meetings are supplemented by private lessons.
Prereq or Coreq: MUSC 141 or Permission .

MUSC 239 Aural Skills III
1 credit
Continuation of MUSC 140. Two lec-labs a wk. Recommended coreq: MUSA 245. (Fall only)
Prereq: "C" or better in MUSC 139, MUSC 140
Coreq or Prereq: MUSC 241.

MUSC 240 Aural Skills IV
1 credit
Continuation of MUSC 140. Two lec-labs a wk. Recommended coreq: MUSA 246. (Spring only)
Prereq: "C" or better in MUSC 239
Coreq or Prereq: MUSC 242.

MUSC 241 Theory of Music III
3 credits
(Fall only)
Prereq: "C" or better in MUSC 142.

MUSC 242 Theory of Music IV
3 credits
(Spring only)
Prereq: "C" or better in MUSC 241.

MUSC 299 (s) Directed Study
Credit arranged.

MUSC 328 Instrumental and Choral Arranging
2 credits
Principles of instrumentation, transcription, and arranging with emphasis on idiomatic instrumental and choral writing leading to projects in scoring for chamber, band, orchestral, and vocal ensembles. (Spring only)
Prereq: "C" or better in MUSC 242.

MUSC 329 Theoretical Basis of Jazz
2 credits
Harmonic, melodic, rhythmic, and stylistic analysis of principal trends. (Fall only)
Prereq: MUSC 141 or Permission.

MUSC 331 Counterpoint
3 credits
Style and technique of polyphonic 16th century vocal music through 18th century instrumental music, with emphasis on two- to three-part writing; motet, canon, invention, and fugue.
Prereq: MUSC 242 or Permission.

MUSC 400 (s) Seminar
Credit arranged.

MUSC 403 (s) Workshop
Credit arranged.

MUSC 404 (s) Special Topics
Credit arranged.

MUSC 425 Composition
2 credits, max arranged
Joint-listed with MUSC 225, MUSC 525.
For Music Majors. The craft of musical composition, using original composition assignments to focus on common techniques used by past and contemporary composers and to develop skill in notation. Active participation and performance is emphasized. MUSC 425 and MUSC 525 increasingly emphasize varied media and larger forms, but with value being placed on creativity and originality. In MUSC 425 and MUSC 525, class meetings are supplemented by private lessons.
Prereq or Coreq: MUSC 141 or Permission .

MUSC 426 Electronic Music
2 credits
Techniques of musical composition using electronic media. (Spring, Alt/odd yrs)
Prereq: MUSC 242 or Permission.

MUSC 437 Music in Film
3 credits
Joint-listed with MUSC 537
A seminar in the processes, techniques and evaluation of music as used in film. Materials will change each time the course is offered but the major focus will be main-stream motion pictures. Students enrolled for graduate credit will be expected to complete deeper analysis of selected film scores, and to make a presentation in class. (Fall, Alt/odd yrs)

MUSC 442 Musical Analysis
2 credits
Study of traditional forms and analytical techniques. (Spring only)
Prereq: MUSC 242.

MUSC 480 Senior Thesis in Music Theory I
1 credit
Extended research paper, with documentation; subject to be determined in consultation with supervising faculty.
Prereq: MUSC 442.

MUSC 481 Senior Thesis in Music Theory II
1 credit
Gen Ed: Senior Experience
Continuation and completion of extended research paper, with documentation; subject to be determined in consultation with supervising faculty.
Prereq: MUSC 480.

MUSC 490 Senior Recital
0 credits
Gen Ed: Senior Experience
For students in composition required to have a full recital. Graded P/F.
Prereq: audition and Permission
Coreq: MUSC 425.

MUSC 499 (s) Directed Study
Credit arranged.

MUSC 500 Master's Research and Thesis
Credit arranged.

MUSC 501 (s) Seminar
Credit arranged.

MUSC 502 (s) Directed Study
Credit arranged.

MUSC 503 (s) Workshop
Credit arranged.

MUSC 504 (s) Special Topics
Credit arranged.

MUSC 505 (s) Professional Development
Credit arranged.

MUSC 521 Musical Analysis
3 credits
Analysis of selected musical compositions.
Prereq: Permission.

MUSC 525 Composition
2 credits, max arranged
Joint-listed with MUSC 225, MUSC 425.
For Music Majors. The craft of musical composition, using original composition assignments to focus on common techniques used by past and contemporary composers and to develop skill in notation. Active participation and performance is emphasized. MUSC 425 and MUSC 525 increasingly emphasize varied media and larger forms, but with value being placed on creativity and originality. In MUSC 425 and MUSC 525, class meetings are supplemented by private lessons.
Prereq or Coreq: MUSC 141 or Permission .

MUSC 537 Music in Film
3 credits
Joint-listed with MUSC 437
A seminar in the processes, techniques and evaluation of music as used in film. Materials will change each time the course is offered but the major focus will be main-stream motion pictures. Students enrolled for graduate credit will be expected to complete deeper analysis of selected film scores, and to make a presentation in class. (Fall, Alt/odd yrs)

MUSC 590 (s) Master's Comp Recital
0 credits
For students whose degree requires a composition recital as part of the degree requirements. Graded P/F.
Prereq: Audition and Permission of committee
Coreq: MUSC 525 .

MUSC 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

MUSIC--GENERAL (MUSX)

MUSX 101 Orientation for Music Majors
0 credits
An orientation to requirements, processes, and opportunities associated with the study of music as a discipline for new students in the School of Music; a foundation for success and survival in the study of music. Graded P/F. Hybrid lecture and online course for first year students; online only course for transfer students.

MUSX 140 Recital Attendance
0 credits
Students will attend five Lionel Hampton School of Music (LHSOM) Convocations, five faculty/guest recitals, and five other music performances. Graded P/F.

MUSX 200 (s) Seminar
Credit arranged.

MUSX 203 (s) Workshop
Credit arranged.

MUSX 204 (s) Special Topics
Credit arranged.

MUSX 283 (s) English and Italian Diction for Singers
2 credits
The first semester in a yearlong sequence of study of the use of the International Phonetic Alphabet in English and foreign languages for singing. This course covers the phonetic symbols and diction rules for English and Italian.
Prereq: Music Major or Permission .

MUSX 284 (s) German and French Diction for Singers
2 credits
Continuation of the study of the use of the International Phonetic Alphabet in singing. This course covers the phonetic symbols and diction rules for German and French.
Prereq:'C' or better in MUSX 283 .

MUSX 298 (s) Internship
1-3 credits, max arranged
Open to all students. Graded P/F.
Prereq: Permission.

MUSX 299 (s) Directed Study
Credit arranged.

MUSX 301 Technology for Musicians
1 credit
Current applicable music technologies and software, as well as lighting, acoustics, recording, sound reinforcement and troubleshooting associated with technology.
Prereq: Music Major or Permission.

MUSX 320 Alexander Technique I
1 credit
Joint-listed with MUSX 520.
An active and scholarly exploration of the Alexander Technique. Participants will discover how their habits of movement are interfering with their overall coordination. The purpose of this course is to unlock creativity, discover freedom and ease in performance, reduce stress and tension throughout the body, and prevent performance related injuries.

MUSX 330 Continuing Studies in the Alexander Technique
1 credit, max arranged
Joint-listed MUSX 530.
Continuation of study of the Alexander Technique for musicians, actors and dancers.
Prereq: MUSX 320 or MUSX 520.

MUSX 400 (s) Seminar
Credit arranged.

MUSX 403 (s) Workshop
Credit arranged.

MUSX 404 (s) Special Topics
Credit arranged.

MUSX 410 Current Topics in Music Business
3 credits
This course will focus on the current topics and trends common to the many areas that fall under the umbrella of Music Business. Topics will include: career niches and opportunities, press kit/introduction materials (bios, resume, CV, cover letters, business cards, headshots), the audition process, touring, branding, marketing and advertising oneself or a group, copyright laws, publications, social media and online presence, taxes, and professional ethics.

MUSX 498 (s) Internship
1-3 credits, max arranged
Open to all juniors and seniors and graduate students. Graded P/F.
Prereq: Permission.

MUSX 499 (s) Directed Study
Credit arranged.

MUSX 500 Master's Research and Thesis
Credit arranged.

MUSX 501 (s) Seminar
Credit arranged.

MUSX 502 (s) Directed Study
Credit arranged.

MUSX 503 (s) Workshop
Credit arranged.

MUSX 504 (s) Special Topics
Credit arranged.

MUSX 511 Bibliography and Research
3 credits
Orientation to grad study; bibliography and research procedures.
Prereq: Admission to graduate program or Permission.

MUSX 520 Alexander Technique I
1 credit
Joint-listed with MUSX 320.
An active and scholarly exploration of the Alexander Technique. Participants will discover how their habits of movement are interfering with their overall coordination. The purpose of this course is to unlock creativity, discover freedom and ease in performance, reduce stress and tension throughout the body, and prevent performance related injuries.

MUSX 530 Continuing Studies in the Alexander Technique
1 credit, max arranged
Joint-listed MUSX 330.
Continuation of study of the Alexander Technique for musicians, actors and dancers.
Prereq: MUSX 320 or MUSX 520.

MUSX 598 (s) Internship
Credit arranged.

MUSX 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

MUSIC--HISTORY AND LITERATURE (MUSH)

MUSH 111 Introduction to Music Literature
3 credits
Gen Ed: Humanities
Introduction to the study of music literature, including western and world traditions. Emphasis on aural and score analysis, writing, and research techniques. (Spring only)
Prereq: MUSC 141.

MUSH 200 (s) Seminar
Credit arranged.

MUSH 201 History of Rock and Roll
3 credits
Gen Ed: Humanities
A study of the history and culture of rock music. May not be counted as a required music history elective for music majors.

MUSH 203 (s) Workshop
Credit arranged.

MUSH 204 (s) Special Topics
Credit arranged.

MUSH 299 (s) Directed Study
Credit arranged.

MUSH 321 Music in Western Civilization I
3 credits
Musical culture, styles, and genres from the Middle Ages through 1750. (Fall only)
Prereq: "C" or better in MUSI 100 or MUSH 111.

MUSH 322 Music in Western Civilization II
3 credits
European and American musical culture, styles, and genres from 1750 to World War I. (Spring only)
Prereq: "C" or better in MUSI 100 or MUSH 111.

MUSH 323 Music in Western Civilization III
3 credits
European and American musical cultures, styles, and genres, including jazz, from World War I to the present. (Fall only)
Prereq: "C" or better in MUSI 100 or MUSH 111.

MUSH 330 History of Music Theatre
3 credits
A study of the development of American musical theatre. Students will analyze the forms and styles of representative works. (Alt/yrs)

MUSH 400 (s) Seminar
Credit arranged.

MUSH 403 (s) Workshop
Credit arranged.

MUSH 404 (s) Special Topics
Credit arranged.

MUSH 410 (s) Studies in Jazz History
3 credits
Gen Ed: American Diversity
Joint-listed with MUSH 510.
Selected topics in jazz. Additional projects/assignments required for graduate credit. (Fall, Alt/odd yrs)
Prereq: MUSH 321, MUSH 322, MUSH 323 or Permission .

MUSH 418 (s) Studies in Classic/Romantic Music
3 credits
Joint-listed with MUSH 518.
Selected topics in Classic/Romantic music. Additional projects/assignments reqd for grad cr. (Fall, Alt/even yrs)
Prereq: MUSH 321, MUSH 322, MUSH 323 or Permission.

MUSH 419 (s) Studies in 20th Century Music
3 credits
Joint-listed with MUSH 519.
Selected topics in 20th-century music. Additional projects/assignments required for graduate credit. (Spring, Alt/even yrs)
Prereq: MUSH 321, MUSH 322, MUSH 323 or Permission .

MUSH 420 Studies in World Music
3 credits
Gen Ed: International
Joint-listed with MUSH 520.
Selected topics in the music of world cultures. Additional projects/assignments required for graduate credit. (Spring, alt/odd yrs)
Prereq: MUSH 321, MUSH 322, and MUSH 323; or Permission .

MUSH 450 Orchestral Literature
2 credits
Joint-listed with MUSH 550.
Open to all students. Survey of standard orchestral literature. Additional assignments required for graduate students. (Spring, Alt/even yrs)
Prereq: MUSH 322, MUSH 323, and Junior standing, or Permission.

MUSH 451 (s) Repertoire
2 credits, max arranged
Joint-listed with MUSH 551.
May be repeated for cr as content changes. Historical and analytical survey of literature available in all performing media. Additional projects/assignments reqd for grad cr.
Prereq: Junior standing and Permission.

MUSH 452 Solo Vocal Repertoire
2 credits
Historical and analytical survey of solo vocal literature. (Fall, Alt/even yrs)
Prereq: Permission.

MUSH 454 Keyboard Repertoire I
2 credits
Joint-listed with MUSH 554.
Content will cover the development of keyboard literature from J.S. Bach through Beethoven. Additional projects/assignments reqd for grad cr. (Fall, Alt/odd yrs)
Prereq: Permission.

MUSH 455 Keyboard Repertoire II
2 credits
Joint-listed with MUSH 555.
Content will cover the development of keyboard literature from Schubert to present. Additional projects/assignments reqd for grad cr. (Spring, Alt/even yrs)
Prereq: Permission.

MUSH 456 Choral Literature I
2 credits
Joint-listed with MUSH 556.
Historical and analytical survey of choral literature from the early Renaissance through Classical era. Additional projects/assignments required for graduate credit.

MUSH 457 Choral Literature II
2 credits
Joint-listed with MUSH 557.
Historical and analytical survey of choral literature from the Romantic through Contemporary era. Additional projects/assignments required for graduate credit.
Prereq for MUSH 457: MUSH 456
Prereq for MUSH 557: MUSH 556 .

MUSH 480 Senior Thesis in Music History I
1 credits
Extended research paper, with documentation; subject to be determined in consultation with supervising faculty.
Prereq: MUSH 321, MUSH 322, MUSH 323, one 400 music history elective, and Permission.

MUSH 481 Senior Thesis in Music History II
1 credit
Gen Ed: Senior Experience
Continuation and completion of extended research paper, with documentation; subject to be determined in consultation with supervising faculty.
Prereq: MUSH 480.

MUSH 499 (s) Directed Study
Credit arranged.

MUSH 500 Master's Research and Thesis
Credit arranged.

MUSH 501 (s) Seminar
Credit arranged
(Spring, even yrs on-line, odd yrs on-campus)

MUSH 502 (s) Directed Study
Credit arranged.

MUSH 503 (s) Workshop
Credit arranged.

MUSH 504 (s) Special Topics
Credit arranged.

MUSH 510 (s) Studies in Jazz History
3 credits
Joint-listed with MUSH 410.
Gen Ed: American Diversity
Selected topics in jazz. Additional projects/assignments required for graduate credit. (Fall, Alt/odd yrs)
Prereq: MUSH 321, MUSH 322, MUSH 323 or Permission .

MUSH 518 (s) Studies in Classic/Romantic Music
3 credits
Joint-listed with MUSH 418.
Selected topics in Classic/Romantic music. Additional projects/assignments reqd for grad cr. (Fall, Alt/even yrs)
Prereq: MUSH 321, MUSH 322, MUSH 323 or Permission.

MUSH 519 (s) Studies in 20th Century Music
3 credits
Joint-listed with MUSH 419.
Selected topics in 20th-century music. Additional projects/assignments required for graduate credit. (Spring, Alt/even yrs)
Prereq: MUSH 321, MUSH 322, MUSH 323 or Permission.

MUSH 520 Studies in World Music
3 credits
Joint-listed with MUSH 420.
Selected topics in the music of world cultures. Additional projects/assignments required for graduate credit. (Spring, alt/odd yrs)
Prereq: MUSH 321, MUSH 322, and MUSH 323; or Permission .

MUSH 550 Orchestral Literature
2 credits
Joint-listed with MUSH 450.
Open to all students. Survey of standard orchestral literature. Additional assignments required for graduate students. (Spring, Alt/even yrs)
Prereq: MUSH 322, MUSH 323, and Jr standing, or Permission.

MUSH 551 (s) Repertoire
2 credits, max arranged
Joint-listed with MUSH 451. May be repeated for cr as content changes.
Historical and analytical survey of literature available in all performing media. Additional projects/assignments reqd for grad cr.
Prereq: Junior standing and Permission.

MUSH 554 Keyboard Repertoire I
2 credits
Joint-listed with MUSH 454.
Content will cover the development of keyboard literature from J.S. Bach through Beethoven. Additional projects/assignments reqd for grad cr. (Fall, Alt/odd yrs)
Prereq: Permission.

MUSH 555 Keyboard Repertoire II
2 credits
Joint-listed with MUSH 455.
Content will cover the development of keyboard literature from Schubert to present. Additional projects/assignments reqd for grad cr. (Spring, Alt/even yrs)
Prereq: Permission.

MUSH 556 Choral Literature I
2 credits
Joint-listed with MUSH 456.
Historical and analytical survey of choral literature from the early Renaissance through Classical era. Additional projects/assignments required for graduate credit.

MUSH 557 Choral Literature II
2 credits
Joint-listed with MUSH 457.
Historical and analytical survey of choral literature from the Romantic through Contemporary era. Additional projects/assignments required for graduate credit.
Prereq for MUSH 457: MUSH 456
Prereq for MUSH 557: MUSH 556 .

MUSH 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

MUSIC--TEACHING (MUST)

MUST 200 (s) Seminar
Credit arranged.

MUST 203 (s) Workshop
Credit arranged.

MUST 204 (s) Special Topics
Credit arranged.

MUST 251 String Instrument Techniques
1 credit
Group instruction. Problems of playing and teaching stringed instruments in elementary and secondary schools. (Fall only)
Prereq: Permission.

MUST 253 Brass Instrument Techniques
1 credit
Group instruction. Problems of playing and teaching brass instruments in elementary and secondary schools. (Spring only)
Prereq: Permission.

MUST 254 Percussion Techniques
1 credit
Group instruction. Problems of playing and teaching percussion instruments in elementary and secondary schools. (Spring only)
Prereq: Permission.

MUST 255 Woodwind Techniques
1 credit
Group instruction. Problems of playing and teaching clarinet, flute, and saxophone in elementary and secondary schools. (Spring only)
Prereq: Permission.

MUST 256 String Techniques and Orchestral Literature
1 credit
Group Instruction. Continued study of problems of playing and teaching stringed instruments, including music literature and materials, elementary and secondary schools.
Prereq: MUST 251.

MUST 299 (s) Directed Study
Credit arranged.

MUST 352 Double Reed Techniques
1 credit
Group instruction. Problems of playing and teaching oboe and bassoon in elementary and secondary schools. (Fall only)
Prereq: MUST 255 or Permission.

MUST 382 General Music Methods
3 credits
Curriculum design, instructional materials, and methodologies (including Orff, Kodaly and Dalcroze approaches) for teaching general music in grades K-8. Practicum -approximately five field-teaching experiences must be scheduled in general music classrooms outside of class time. (Spring only)
Prereq: EDCI 201 and admission to the teacher education program; or Permission
Prereq or Coreq: MUST 383.

MUST 383 Principles of Music Teaching
3 credits
Philosophy, principles, curriculum, and organization of the school music program; world music pedagogy; teaching cultural diverse learners. (Fall only)
Prereq: EDCI 201, MUSC 142, and admission to teacher education program; or Permission .

MUST 385 Choral Music in the Secondary School
3 credits
Methods, instructional materials, rehearsal techniques and techniques for teaching choral music in grades 7-12. Includes practicum hours. (Fall, Alt/odd yrs)
Prereq: 1 cr in MUSA 116/MUSA 316 or 1 cr in MUSA 117/MUSA 317
Prereq or **Coreq:** 1 additional cr in MUSA 116/MUSA 316 or 1 cr in MUSA 117/MUSA 317; and MUST 383; and MUSA 387; or Permission.

MUST 386 Instrumental Music in the Secondary School
3 credits
Methods, instructional materials, rehearsal techniques and techniques for teaching instrumental music in grades 7-12. Includes practicum hours. (Spring only)
Prereq: MUSC 142
Prereq or **Coreq:** MUST 383, MUSA 387, or Permission.

MUST 400 (s) Seminar
Credit arranged.

MUST 403 (s) Workshop
Credit arranged.

MUST 404 (s) Special Topics
Credit arranged.

MUST 405 (s) Professional Development
Credit arranged.

MUST 432 (s) Practicum: Music Teaching
11 credits
Gen Ed: Senior Experience
Supervised music teaching in public schools. Graded P/F.
Prereq: Successful completion of all required course work for the Music Education: Vocal or Instrumental major, cumulative GPA of 2.75, acceptance to the College of Education and permission of the School of Music.
Coreq: MUST 445 .

MUST 435 (s) Pedagogy & Materials
2 credits, max arranged
Joint-listed with MUST 535.
Methods and materials of performance techniques for each performance field. Additional projects/assignments reqd for grad cr. (Vocal Pedagogy – Spring, Alt/odd yrs)
Prereq: Permission.

MUST 436 Pedagogy and Materials: Keyboard I
2 credits
Joint-listed with MUST 536.
Objectives and goals of teaching the beginning piano student in regards to business aspects, literature and techniques. Additional projects/assignments reqd for grad cr. (Fall, Alt/even yrs)
Prereq: Permission.

MUST 437 Pedagogy and Materials: Keyboard II
2 credits
Joint-listed with MUST 537.
Objectives and goals of teaching the intermediate and early advanced piano student in regards to literature and techniques. Additional projects/ assignments reqd for grad cr. (Spring, Alt/odd yrs)
Prereq: Permission.

MUST 438 (s) Practicum
Credit arranged
Studio and classroom teaching of secondary music majors, minors, or electives.
Prereq: Permission.

MUST 445 Proseminar in Music Teaching
1 credit
Coreq: MUST 432.

MUST 465 Jazz Band Rehearsal Techniques
2 credits
Methods, materials, and literature for jazz bands in public schools. (Spring only)
Prereq or Coreq: MUST 383
Coreq: MUSA 323 .

MUST 466 Marching Band Techniques
1 credit
Techniques of drilling; materials for field and street maneuvers; preparation of shows. (Fall only)
Prereq: MUSC 142
Prereq or Coreq: MUSA 119/MUSA 319; or Permission.

MUST 499 (s) Directed Study
Credit arranged.

MUST 500 Master's Research and Thesis
Credit arranged.

MUST 501 (s) Seminar
Credit arranged.

MUST 502 (s) Directed Study
Credit arranged.

MUST 503 (s) Workshop
Credit arranged.

MUST 504 (s) Special Topics
Credit arranged.

MUST 505 (s) Professional Development
Credit arranged
Scope and sequence of musical experience in public schools through curriculum development.

MUST 508 Psychology of Music
3 credits
The physical and psychological aspects of music involving human behavior.

MUST 509 Foundations of Music Education
3 credits
A treatment of historical perspectives, philosophy- aesthetics identified with music education, and learning theories applied to music teaching/ learning. Basic research and writing skills appropriate to graduate studies in music education. Offered via the Web only. (Spring, odd alt/yrs)

MUST 510 Portfolio 1
1 credit
First semester of work on the required capstone electronic portfolio. Must be taken the first semester of study. Offered via the Web only.

MUST 511 Introduction to Research in Music Education
3 credits
Writing skills, materials, and procedures utilized in music research; measurement, experimental design, theories/ procedures for evaluation, statistics, computer applications, and initiation of scholarly research. Offered via the Web only. (Spring, odd alt/yrs)

MUST 512 Contemporary Trends in Music Education
3 credits
Current philosophies and concepts influencing contemporary music education practices, methods, and material. Investigation into social psychology of music as applied to existing music instruction in public schools. Offered via the Web only. (Fall, odd alt/yrs)

MUST 513 Assessment of Musical Behaviors
3 credits
Review of standardized music tests and an examination of methods for developing tests related to the measurement of musical behavior. Offered via the Web only. (Spring, odd alt/yrs)

MUST 514 Multicultural Music Education
3 credits
Overview of historical, philosophical, cultural, and pedagogical issues in multicultural music education. Emphasis on the development of knowledge that will inform and enhance instructional practice. Offered via the Web only. (Spring, odd alt/yrs)

MUST 515 Music for Special Learners
3 credits
Review of the learning styles of exceptional children and the implications for providing realistic musical activities in the classroom. Emphasis will be placed on developing musical skills with special learners. Offered via the Web only. (Fall, odd alt/yrs)

MUST 535 (s) Pedagogy & Materials
2 credits, max arranged
Joint-listed with MUST 435.
Methods and materials of performance techniques for each performance field. Additional projects/assignments reqd for grad cr. (Vocal Pedagogy – Spring, Alt/odd yrs)
Prereq: Permission.

MUST 536 Pedagogy and Materials: Keyboard I
2 credits
Joint-listed with MUST 436.
Objectives and goals of teaching the beginning piano student in regards to business aspects, literature and techniques. Additional projects/ assignments reqd for grad cr. (Fall, Alt/even yrs)
Prereq: Permission.

MUST 537 Pedagogy and Materials: Keyboard II
2 credits
Joint-listed with MUST 437.
Objectives and goals of teaching the intermediate and early advanced piano student in regards to literature and techniques. Additional projects/ assignments reqd for grad cr. (Spring, Alt/odd yrs)
Prereq: Permission.

MUST 538 (s) Practicum
Credit arranged
Studio and classroom teaching of secondary music majors, minors, or electives.
Prereq: Permission.

MUST 560 Portfolio 2
1 credit
Final semester of work to complete the required capstone electronic portfolio. Offered via the Web only.
Prereq: MUST 510 .

MUST 568 Technology in the Music Classroom
1 credit
Advanced study of music technology with an emphasis on integration into the music classroom. (Summer, even yrs)

MUST 585 Advanced Choral Methods
1 credit
Examination of contemporary research and pedagogy with an emphasis on developing appropriate instructional strategies for use with adolescent students in choral and general music classrooms. (Summer, odd yrs)

MUST 586 Advanced Instrumental Methods
1 credit
Overview of current practice in learning and teaching music with emphasis on the development of practical strategies for implementation within the instrumental music classroom. (Summer, odd yrs)

MUST 598 (s) Internship
Credit arranged.

MUST 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

NATURAL RESOURCES (NR)

NR 101 Exploring Natural Resources
2 credits
Introduction to the interdisciplinary fields and professions in natural resources. Includes field trips. (Fall only)

NR 200 (s) Seminar
Credit arranged.

NR 203 (s) Workshop
Credit arranged.

NR 204 (s) Special Topics
Credit arranged.

NR 211 Undergrad Research Experience I
2 credits
Introduction to the scientific method in natural resources and environmental sciences, including ethics as it applies to research. Students are selected through an application process and are provided a budget to pursue a research topic of interest. Depending on project, student may participate in trips and laboratory study.

NR 212 Undergrad Research Experience II
1 credit
Continuation of NR 210. Focus on describing data and various methods of reporting research results. Depending on project, student may participate in field trips and laboratory study. Participation in UI Undergraduate Research Symposium is expected.
Prereq: NR 210.

NR 299 (s) Directed Study
Credit arranged.

NR 300 Ecology and Conservation Biology Thesis Seminar
1 credit
A survey of issues related to professional development and thesis preparation in the field of Ecology and Conservation Biology.
Prereq: Instructor Permission .

NR 321 Ecology
3 credits
Fundamental principles of the science of ecology. Major topics covered by the course include the physical environment, how organisms interact with each other and their environment, evolutionary processes, population dynamics, communities, energy flow and ecosystems, human influences on ecosystems, and the integration and scaling of ecological processes through systems ecology. Computer-based materials are used extensively for guided independent learning of ecology. Course information: EcologyOnline.net. Recommended Preparation: Introductory botany and zoology.
Prereq: Introductory Biology or permission.

NR 322 Field Ecology
2 credits
Introduction to field methods in the science of ecology. This field course, offered in the Frank Church River of No Return Wilderness, emphasizes a unique outdoor experience for ecological observations and understanding. Methods for monitoring and ecological assessment will include experimental design, use of instruments for data collection, and data analysis.
Prereq: BIOL 102 and BIOL 102L, BIOL 114, BIOL 115, BIOL 115L or permission
Coreq: NR 321 .

NR 400 (s) Seminar
Credit arranged.

NR 403 (s) Workshop
Credit arranged.

NR 404 (s) Special Topics
Credit arranged.

NR 405 (s) Professional Development
Credit arranged.

NR 406 Teaching Asst. Practicum
1-2 credits
Instructional and other classroom assistance for NR 101 – Exploring Natural Resources performed by students under faculty supervision.
Prereq: Permission .

NR 407 Natural Resource Ambassador Practicum
1-2 credits, max 12
Student ambassadors are selected through an application and interview process to represent CNR to future students at recruiting activities and functions. Students will learn skills in leadership, communication, networking, public speaking, and time management. Students will be responsible for visiting high schools, attending college and career fairs, recruiting events on campus.
Prereq: Permission .

NR 497 Senior Thesis
1-3 credits, max 3
Independently plan and conduct a thesis project; write and defend the thesis under supervision of a supervisor.
Prereq: Senior standing and Permission.

NR 498 (s) Internship
Credit arranged.

NR 499 (s) Directed Study
Credit arranged
For the individual student; conferences, library, field, or lab work.
Prereq: Senior standing in the College of Natural Resources, GPA 2.5, and Permission.

NR 501 (s) Seminar
Credit arranged
Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.
Prereq: Permission.

NR 502 (s) Directed Study
Credit arranged.

NR 503 (s) Workshop
Credit arranged
Selected topics in the conservation and management of natural resources.
Prereq: Permission.

NR 504 (s) Special Topics
Credit arranged.

NR 505 Advanced GIS Applications in Wildlife Sciences
1 credit
Advanced wildlife GIS applications focusing on spatial home range computations and habitat studies; accelerated.
Prereq: GIS experience or Permission.

NR 507 Moral Reasoning in Natural Resources
3 credits
Exploration of the practical aspects of moral reasoning on current issues in natural resources. The purpose of the course is to discover the essence of reasoning, rationality, and reflection on moral and ethical dilemmas with regard to current issues in natural resources.

NR 511 Preparing Scientific Manuscripts
1 credit
Details the preparation of manuscripts for thesis chapters and submission to peer-reviewed journals. Exercises include identifying scope, unique requirements for manuscript parts, use of graphing and reference database tools, editing and peer reviewing. Two 75 min classes per week, first half of semester. Second half of semester involves weekly writing workshops to finalize projects. Entry into class requires possession of analyzed dataset
Prereq: Instructor Permission.

NR 520 Preparing Scientific Manuscripts
3 credits
Details the preparation of manuscripts for thesis chapters and submission to peer-reviewed journals. Exercises include identifying scope, unique requirements for manuscript parts, use of graphing and reference database tools, editing and peer reviewing. Two 75 min classes per week, first half of semester. Second half of semester involves weekly writing workshops to finalize projects. Entry into class requires possession of analyzed dataset.
Prereq: Permission.

NR 525 Scientific Graphics Design
3 credits
Principles of graphics design for science, including the graphical presentation of data for printed and electronic journals, poster presentations, and oral presentations. Students will analyze published scientific graphics as well as learn to design their own graphs based on data from their graduate research or other sources.

NR 598 (s) Internship
Credit arranged.

NR 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

NR 600 Doctoral Research and Dissertation
Credit arranged
Prereq: Admission to the doctoral program in "natural resources" and Permission of department.

NATURAL RESOURCES AND SOCIETY (NRS)

NRS 125 Introduction to Conservation and Natural Resources
3 credits
Gen Ed: Social Science
Foundations of natural resource management and agencies with responsibility for land management; philosophical, theoretical, and historical basis for protected areas; principles and frameworks for managing human use of and recreation on public lands.

NRS 200 (s) Seminar
Credit arranged.

NRS 203 (s) Workshop
Credit arranged.

NRS 204 (s) Special Topics
Credit arranged.

NRS 235 Society and Natural Resources
3 credits
Gen Ed: Social Science
Cross-listed with FOR 235.
An exploration of how people use, value, manage, impact, and are affected by natural resources; course emphasizes social and economic realities and political and legal processes in a context of current and historical natural resource issues. Two lectures and one 1-hr small discussion group meeting a week.

NRS 250 Environmental Problem Solving
3 credits
Integrated problem solving through simulations of environmental protection challenges and issues. Utilizing team-building approaches students identify environmental problems, analyze data, and develop strategies for solutions.

NRS 299 (s) Directed Study
Credit arranged.

NRS 304 Consrvation Social Sciences Field Studies
3 credits
Field site evaluation of conservation social science cases. One hundred and twenty hours of instruction during a 12-day field excursion during summer session; pre- and post-visit written and oral assignments; special fee assessed. (Summer only)

NRS 310 Social Science Methods
4 credits
Quantitative, qualitative, and mixed approaches to studying social aspects of conservation and the environment; how to choose and apply selective research methods; design, collection, and statistical analysis of primary and secondary data; program evaluation; reporting results; interpreting research literature; lab exercises in research design, data collection, and analysis; and the communication of research issues and findings to lay and professional audiences. Special fee assessed. Three lec and 2 hrs of lab a wk. Recommended Preparation: Basic computer skills. (Fall only)
Prereq: STAT 251 .

NRS 311 Public Involvement in Natural Resource Management
3 credits
Theoretical and applied concepts of public involvement in both public and private sectors of natural resource management; case studies and applied techniques or methods for public involvement; National Environmental Policy Act (NEPA) regulations and other public involvement policy or law. Field trip may be reqd. (Spring only)

NRS 364 Politics of the Environment
3 credits
Cross-listed with POLS 364
Political factors that influence formation, implementation, and impact of public policies aimed at protecting the environment.

NRS 375 Introduction to Spatial Analysis for Natural Resource Management
3 credits
Cross-listed with FOR 375.
Methods and techniques for obtaining quantitative and qualitative geospatial information from aerial and satellite images, maps, and the Global Positioning System for input into geographic information systems. Analysis of geospatial data for mapping, monitoring and planning associated with all aspects of natural resource management. Two lec and one 2-hr lab a wk.
Prereq: College Algebra.

NRS 383 Natural Resource and Ecosystem Service Economics
3 credits
The role and application of economic theories and methods in natural resource and ecosystem service decision-making. Economic tools are applied to the management of forests, fisheries, rangeland, recreation, wildlife, and other contemporary issues. (Spring only)
Prereq: FOR 235 or NRS 235; and ECON 202 or ECON 272; and MATH 143.

NRS 385 Conservation Management and Planning - I
4 credits
Theory and practice of decision-making for conservation planning and management, including protected areas, working landscapes, conservation organizations and the challenges facing natural resource managers in the 21st Century. Field trips and a collaborative group community Service-Learning project are required. (Fall only)

NRS 386 Social-Ecological Systems
3 credits
Cross-listed with ENVS 386.
Social-ecological systems are comprised of interconnected social, economic, and environmental components. Explore social-ecological systems frameworks and fundamental principles of sustainability in social-ecological systems by examining theory and practice in case studies. Topics may include natural resource scarcity and human conflict, ecosystem service provision, management, and conservation, and land tenure, rights, and justice relating to human access to natural resources.

NRS 387 Environmental Communication Skills
3 credits
Introduction to communications skills in the context of natural resources, including environmental and cultural interpretation; communication psychology and media applied to noncaptive audiences in natural resource situations. Field trip may be required. Special fee assessed.
Prereq: Permission.

NRS 398 (s) Internship
Credit arranged.

NRS 400 (s) Seminar
Credit arranged.

NRS 401 (s) Practicum in Tutoring
1-3 credits, max 3
Tutorial services performed by advanced students under faculty supervision. Graded P/F.
Prereq: Permission.

NRS 403 (s) Workshop
Credit arranged.

NRS 404 (s) Special Topics
Credit arranged.

NRS 440 Restoration Ecology
3 credits
Cross-listed with REM 440
The ecological restoration of disturbed ecosystems. Fundamental principles from ecology, ecophysiology, and community ecology are used in a systems ecology approach to examine how the structure and function of damaged ecosystems can be restored -- with the goal of establishing a stable and self-sustaining ecosystem.
Prereq: NR 321, FOR 221, REM 221, WLF 220, BIOL 314, or permission.

NRS 450 Global Environmental Change
3 credits
Major global environmental changes addressed using an interdisciplinary approach. Topics may include processes and principles of ecosystems, biogeochemical cycles, impacts and mitigation of climatic change, atmospheric chemistry, feedbacks between climate and various earth system processes, and trends in global biodiversity.
Prereq: MATH 143 or STAT 251.

NRS 462 Natural Resource Policy
3 credits
Cross-listed with POLS 462
Political and institutional context for making natural resource policy; emphasis on interaction between private and public sectors and the federal, state, and tribal governments, including an examination of topical issues in natural resource politics.

NRS 472 Remote Sensing of the Environment
3-4 credits
Cross-listed with FOR 472
Current airborne and satellite systems, data acquisition on ground and from remote locations, instrumentation, imagery interpretation and digital analysis, applications for natural resource science and management. Two 75-minute lectures and one two-hour lab per week. Recommended Preparation: MATH 143. Cooperative: open to WSU degree-seeking students.

NRS 473 ECB Senior Presentation
1 credit
Gen Ed: Senior Experience
Cross-listed with FISH 473, FOR 473, REM 473, RMAT 473, and WLF 473
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with NRS 485 or NRS 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).
Prereq: Instructor Permission.

NRS 475 Local and Regional Environmental Planning
3 credits
Cross-listed with ENVS 475.
This course focuses on environmental planning by governments, nonprofit organizations, and collaborative partnerships at the local and regional level. Students will study a variety of planning approaches, such as community visioning and policy and management tools. Topics will include planning for public health, natural areas, working landscapes, and the built environment.
Prereq: Junior or Senior standing or permission.

NRS 476 Environmental Project Management and Decision Making
4 credits
Gen Ed: Senior Experience
Integrated, interdisciplinary approaches to project and program management and decision making. Emphasis on environmental planning techniques, scenario development, analysis, and application of geospatial tools such as GIS and remote sensing. Direct experience and basic skills for project and program development and evaluation.
Prereq: NRS 311.

NRS 481 Conservation Leadership
3 credits
Generates essential understanding, insight, and skills into leadership of political and organizational systems designed to conserve natural resources. Field trip may be required. (Spring only)
Prereq: NRS 235, NRS 125.

NRS 482 Outdoor Leadership Expedition
3 credits
This expedition based course will explore the practice of leadership, using the wilderness experience as the classroom. Topics include trip planning, small group dynamics, decision-making, communication and expedition behavior. Examining leadership theory, modeling of leadership techniques, written assignments, and backcountry skill development are used to support learning.

NRS 483 Senior Project Presentation
1 credit
Cross-listed with FISH 483, FOR 483, REM 483, and WLF 483
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with NRS 485 or NRS 497.

NRS 484 Forest Policy and Admin
2 credits
Cross-listed with FOR 484
Evaluation of land and forest problems and policies in the U.S.; analysis of current conditions and policies; historical development of governmental and private agencies concerned with the administration of forest conservation program. Recommended Preparation: FOR 235.
Prereq: Junior standing.

NRS 485 Ecology and Conservation Biology Senior Project
1-3 credits, max 3
Cross-Listed with FISH 485, FOR 485, and WLF 485
Scholarly work; learning objectives include development and formal proposal of a specific project and conducting the project or research with the guidance of a faculty mentor.

NRS 486 Public Involvement in Natural Resource Management
3 credits
Theoretical and applied concepts of public involvement in both public and private sectors of natural resource management; historical and legal mandates, government agency responsibilities, applied methods and techniques, case studies, and practical experience. Three lec and three hours of lab a week; field trip may be reqd. (Spring only)

NRS 487 Environmental Education
3 credits
Concept and techniques of environmental education with emphasis on informal education settings such as residential and day-use environmental education centers, nature centers, visitor centers. Field trip may be required. (Spring only)

NRS 490 Wilderness and Protected Area Management
3 credits
Historical and legal aspects of the wilderness and protected area concepts; conceptual and applied approaches, considering both ecological and sociological elements; recent research. (Spring, alt/yrs)

NRS 493 International Land Preservation and Conservation Systems
3 credits
Gen Ed: International
An examination of international approaches to land preservation and conservation; comparative analysis of philosophies, methods of implementation (Parks, Biosphere Reserves, RAMSAR sites, etc.), and associated issues and concerns with these social interventions; ramifications of conservation practices for biophysical and social systems. Field trip may be required. (Spring only)

NRS 496 Monitoring Impacts in Protected Areas and Wilderness
3 credits
Theoretical and applied concepts of identifying, measuring, and monitoring changes in wilderness and protected area ecosystems caused by human influences, including recreation use, management practices, and both on-site and off-site development. Field trips may be reqd. (Spring, alt/yrs)

NRS 497 Senior Thesis
2-4 credits, max 4
Independently plan and conduct a thesis project; write and defend the thesis under supervision of an advisor.
Prereq: Senior standing and minimum 3.20 GPA or Permission.

NRS 498 (s) Internship
Credit arranged.

NRS 499 (s) Directed Study
Credit arranged
For the individual student; conferences, library, field, or lab work.
Prereq: Senior standing, GPA 2.5, and Permission.

NRS 500 Master's Research and Thesis
Credit arranged.

NRS 501 (s) Seminar: Contemporary Issues in Society and Natural Resources
Credit arranged
Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.
Prereq: Permission.

NRS 502 (s) Directed Study
Credit arranged.

NRS 503 (s) Workshop
Credit arranged
Selected topics in the conservation and management of natural resources.
Prereq: Permission.

NRS 504 (s) Special Topics
Credit arranged.

NRS 505 (s) Professional Development
Credit arranged
Credit earned in NRS 505 will not be accepted toward graduate degree programs.

NRS 506 Fundamentals of Research
2 credits
Research approaches, designs, and methodologies as applied in biophysical and social science natural resource professions. Cooperative: open to WSU degree-seeking students.
Prereq: Basic Statistics.

NRS 510 Applications of Communication Theory in Natural Resource Management
3 credits
Examination of communication theories and their applications in sustainable natural resource management; emphasis on social psychological approaches to understanding persuasive communication and applications in environmental interpretation and education, marketing, and sustainable development. (Alt/yrs)

NRS 552 Current Lit in Remote Sensing
1 credit, max arranged
Cross-liisted with FOR 552
Review, present, and discuss recent articles related to remote sensing of the environment. Students choose, critically review, and discuss the articles to develop critical-thinking skills, remote sensing research strategies, and confidence in their knowledge of the literature. Graded P/F.

NRS 558 Science Communication
3 credits
Examines the flow of scientific information between experts and non-experts, with emphasis on educational settings. Project-based and includes practice in digital storytelling, documentary film, blogs, podcasts, public talks, and field experiences. McCall Field Campus. (Spring Only)

NRS 559 Writing Research and Project Proposals
1 credit
Structured instruction for developing a thesis/dissertation or project proposal. Role and importance of research goals and objectives, research questions, and project purpose statements. Justifying a study or project, based on literature and theory. Effective writing techniques to describe research designs, methodological and data collection issues for different types of research and projects. How to articulate data analysis and information processing processes used in qualitative and quantitative research and projects. Meets two hours per week for the first 8 weeks of the spring semester.

NRS 560 Place-based Ecology I
4 credits
Cover plant and animal community ecology from both a qualitative and quantitative perspective. Topics will include: community interaction of plants and animals; community dynamics, succession, and disturbance; basic data collection and statistical analysis of habitat association data; and the effect of abiotic factors on community structure. (Fall only)

NRS 561 Ecological Inquiry for Environmental Educators
2 credits
Address basic ecological concepts and natural resource management issues in the local ecosystem. Emphasis will be placed on developing critical thinking skills and exploring the effects of resource management policy and actions. Course direction will involve moving from a "known facts" way of thinking into the realm of questioning and evaluating the effects of human management of the system. Offered at the McCall Field Campus. (Spring only)

NRS 562 Field Science Teaching
2 credits
Address basic natural history concepts for instructors involved in experiential environmental education with students 12 to 18 years old. Field activities, readings, and instructor modeling of teaching techniques will be included in the format of the course. The course will focus on how to engage each student to learn ecological principles and apply them in a field teaching setting. (Fall only)

NRS 563 Place Based Env. Education
4 credits
Educating students so that they have the skills and knowledge base in order to begin to understand the human and natural environment in which they live is a complicated endeavor. This course is designed to provide a foundation of educational pedagogy, a survey of place-based literature in areas critical to this educational endeavor, and opportunities for personal and professional application. (Fall only)

NRS 564 Teaching Environmental Education in a Winter Environment
2 credits
Address basic principles of ecology during winter. Emphasis will be placed on field experiences including principles of teaching in a winter environment, winter weather, and organism adaptation to winter. (Spring only)

NRS 565 Science Communication and the Environment
4 credits
Examines the flow of scientific information between experts and non-experts, with emphasis on educational settings. Project-based and includes practice in digital storytelling, documentary film, blogs, podcasts, public talks, and field experiences. McCall Field Campus. (Spring Only)

NRS 566 Place-based Ecology II
4 credits
Explore how plants and animals manage the unique survival challenges of winter. Delve into fundamentals of winter ecology including the changing snowpack, life under the ice, plants and animals in the winter environment and plant-animal interactions. The middle of the course addresses environmental change and interactions with winter ecology. At the end of the semester, the springtime environment will be used to study fundamental chemical and physical processes that drive the natural world emerging out of its apparent hibernation. Work outdoors to gain hands-on knowledge and practical experience. Field experiences will be fundamental in developing ecological understanding, with field trips to various locations to gain crucial insight into the natural world during the winter and spring seasons. Outdoor experience and learning will be complemented by lectures, group discussions, readings, and field experiments.

NRS 567 Environmental Education Teaching Practicum I
2 credits
The teaching practicum is an opportunity to improve teaching methods and techniques and expand professional skills under the guidance of mentors at a residential environmental learning center. Teaching in a residential environmental learning center consists of classroom lectures and demonstrations with groups up to 30, as well as field teaching groups of 8 to 10. (Fall only)

NRS 568 Environmental Education Teaching Practicum II
1-2 credits
The teaching practicum is an opportunity to improve teaching methods and techniques and expand professional skills under the guidance of mentors at a residential environmental learning center. Teaching in a residential environmental learning center consists of classroom lectures and demonstrations with groups up to 30, as well as field teaching groups of 8 to 10. (Spring only)

NRS 569 Environmental Education Teaching Practicum III
2 credits
The teaching practicum is an opportunity to improve teaching methods and techniques and expand professional skills under the guidance of Teton Science School staff. Teaching at the Teton Science School consists of classroom lectures and demonstrations with groups up to 30, as well as field teaching groups of 8 to 10. (Spring Only)

NRS 572 Human Dimensions of Restoration Ecology
3 credits
An in-depth investigation of multi dimensional human considerations, including economic, social, and cultural values and the role they play in maintaining, restoring, or sustaining ecosystems. Explores the major premise that projects designed for the restoration and sustainable management of ecosystems and associated resources must be ecologically sound, economically viable, and socially desirable to be successful. Web course. (Spring only)

NRS 573 Planning & Decision Making for Watershed Management
3 credits
Focus on ecological and human factors in process-oriented approaches to watershed analysis and planning for effective decision-making; emphasis on practical applications of current tools and approaches, e.g., GIS, MAU Theory, collaborative management. (Fall only)

NRS 574 Environmental Politics and Policy
3 credits
Political and institutional context for the formulation, implementation, and evaluation of U.S. environmental policy.

NRS 575 Leadership for the Environmental Educator
2 credits
Addresses basic outdoor leadership theory and practice for instructors involved with experiential environmental education with students 12 to 18 years old. Includes a backcountry trip, class work, instructor modeling, peer feedback and reflective practice. Focuses on the individual student's understanding of leadership theory and ability to put theory into practice as a member of a community of learners. Offered at the McCall Field Campus. (Fall only)

NRS 580 Restoration Ecology Practicum
2 credits
Capstone experience in the Restoration Ecology Certificate Program. Students work independently to develop plan for implementing and assessing the success of ecological restoration; plan must synthesize literature, concepts, and challenges; plan shall be written with graphics and electronic submission for possible Internet publication.
Prereq: FOR 526 and REM 440 or Permission.

NRS 582 Natural Resource Policy
3 credits
Carries no credit after POLS 462. Political and institutional context for making natural resource policy; emphasis on interaction between private and public sectors and the federal, state, and tribal governments, including an examination of topical issues in natural resource politics.

NRS 585 Economics and Policy of Ecosystem Services
3 credits
Introduction to economic concepts and methods related to ecosystem services. Specific topics include the history of the ecosystem service framework, methods for valuing ecosystem services and market-based approaches for ecosystem service conservation. (Fall only)

NRS 591 Theories of Environmental Behavior
3 credits
Social science perspectives on attitudes and human behavior in relation to environmental concerns; pertinent psychological sociological and anthropological frameworks are explored. (Fall only)

NRS 592 Emerging Media Outreach in Natural Resources
3 credits
This course introduces students to basic media skills in photography, audio, video, microblogging, social media, content management, basic coding — and blog on a topic of their choice. Students also will explore and share their field experience through a variety of media, and will engage and examine social media uses for advertising, marketing and public relations outreach in natural resources.

NRS 593 PR and Communications in Natural Resource Management
3 credits
Key concepts, principles and practices of good public relations, clear communications, and proactive social marketing in the context of natural resource management; practical applications and skills development for increased effectiveness of resource management professionals through case studies and related exercises focused on communication skills, IT tools, media relations, social marketing, and public involvement.

NRS 597 (s) Practicum
Credit arranged
Graded P/F.
Prereq: Permission.

NRS 598 (s) Internship
Credit arranged
Prereq: Permission.

NRS 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

NRS 600 Doctoral Research and Dissertation
Credit arranged
Prereq: Admission to the doctoral program in "natural resources" and permission of department.

NAVAL SCIENCE (NS)

NS 101 Introduction to Naval Science
2 credits
Introduction to the Naval Service: custom and traditions, structure, career paths, basic leadership, ethics and character development, duties of a junior officer, and ships/aircraft of the U.S. Navy Fleet. Cooperative: open to WSU degree-seeking students. (Fall only).

NS 103 Introduction to Naval Science Laboratory
1 credit
Practical instruction for introduction to Naval Science. Graded P/F. Cooperative: open to WSU degree-seeking students. (Fall only)

NS 104 Seapower and Maritime Affairs
3 credits
An overview of U.S. naval history; seapower and maritime affairs beginning with the Continental Navy to present-day naval history. Cooperative: open to WSU degree-seeking students. (Spring only)

NS 200 (s) Seminar
Credit arranged.

NS 203 (s) Workshop
Credit arranged. .

NS 205 Navigation
3 credits
Theory, principles, and procedures of terrestrial and electronic navigation, and rules of the nautical road." Cooperative: open to WSU degree-seeking students. (Spring only)

NS 206 Naval Leadership and Management
3 credits
Theories of management and management resources, motivational theories, and leadership. Cooperative: open to WSU degree-seeking students. (Fall only)

NS 299 (s) Directed Study
Credit arranged
Cooperative: open to WSU degree-seeking students.

NS 303 Ship Systems I
3 credits
Intro to Naval shipboard engineering systems; propulsion systems; nuclear, gas turbine, and conventional; auxiliary systems and shipboard damage control; basic concepts in ship design. Cooperative: open to WSU degree-seeking students. (Fall only)

NS 304 Ship Systems II
3 credits
Naval weapons systems; theory and process of detection (radar and sonar), evaluation; weapons; delivery, guidance, and explosives; integration of weapons systems with command, control, and communications systems. Cooperative: open to WSU degree-seeking students. (Spring only).

NS 311 Evolution of Warfare
3 credits
Evolution of war through tactics; strategy from Sun Tzu to J.F.C. Fuller. Recommended preparation: NS 101, NS 202. Cooperative: open to WSU degree-seeking students. (Spring only).

NS 402 Naval Leadership and Ethics
3 credits
An intellectual exploration of Western moral traditions and ethical philosophy within a military context. Topics will include military leadership, core values, professional ethics, and conduct of warfare with applications appropriate for future Navy and Marine Corps officers. Recommended preparation: NS 401. Cooperative: open to WSU degree-seeking students. (Spring only).

NS 403 (s) Workshop
Credit arranged. .

NS 406 Naval Operations
3 credits
Naval operations and tactics, relative motion, and Maneuvering Boards. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: NS 301.

NS 412 Fundamentals of Maneuver Warfare
3 credits
Amphibious doctrine and its relation to maneuver warfare. Recommended preparation: NS 311. Cooperative: open to WSU degree-seeking students. (Spring only)

NS 499 (s) Directed Study
Credit arranged
Cooperative: open to WSU degree-seeking students.

NEZ PERCE LANGUAGE (NEZP)

Vertically-related courses in this subject field are: NEZP 101-NEZP 102. A maximum of 16 credits may be earned for vertical credit in any language in the Department of Modern Languages & Cultures.

NEZP 101 Elementary Nez Perce I
4 credits
Cross-listed with AIST 101
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.

NEZP 102 Elementary Nez Perce II
4 credits
Cross-listed with NEZP 102
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.
Prereq: NEZP 101.

NEZP 107 Beginning Nez Perce Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the beginning Nez Perce level. Graded P/F.

NEZP 201 Intermediate Nez Perce I
4 credits
Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.
Prereq: AIST 102 or NEZP 102.

NEZP 204 (s) Special Topics
Credit arranged.

NEZP 398 (s) Internship
Credit arranged.

NEZP 499 (s) Directed Study
Credit arranged.

NUCLEAR ENGINEERING (NE)

NE 400 (s) Seminar
Credit arranged.

NE 404 (s) Special Topics
Credit arranged.

NE 437 Radiation Effects on Materials
3 credits
Joint-listed with NE 537. Cross-listed with MSE 437.
Interactions between radiation and solids.
Prereq: MSE 201 or Permission.

NE 438 Fundamentals of Nuclear Materials
3 credits
Joint-listed with NE 538. Cross-listed with MSE 438.
This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Students who wish to receive credit for the 500 level course are required to do term-projects and advanced problems. (Spring only)
Prereq: MSE 201 or NE 450; or Permission .

NE 450 Principles of Nuclear Engineering
3 credits
Course offered only in Idaho Falls.
Basic nuclear and atomic processes; radioactive decay, binding energy, radiation interactions, reaction cross sections. Neutron diffusion, radiation sources.
Prereq: MATH 310, ENGR 320, or Permission.

NE 498 (s) Internship
Credit arranged.

NE 499 (s) Directed Study
Credit arranged.

NE 500 Master's Research and Thesis
Credit arranged
Course offered only in Idaho Falls.

NE 501 (s) Seminar
Credit arranged
Course offered only in Idaho Falls.

NE 502 (s) Directed Study
Credit arranged.

NE 504 (s) Special Topics
Credit arranged.

NE 511 Nuclear Degradation Mechanisms
3 credits
Cross-listed with MSE 511.
Topics include various degradation mechanisms as applicable to nuclear structural components, including corrosion, creep, radiation damage etc.
Prereq: Graduate standing or Permission .

NE 512 Nuclear Components Inspection
3 credits
Cross-listed with MSE 512.
This course will cover various non-destructive testing techniques to evaluate the environmental degradation of the nuclear structural components. Remnant life estimation of structural components exposed to fatigue, creep and stress corrosion cracking service conditions will be discussed.
Prereq: Graduate standing or Permission .

NE 513 Nuclear Security Science
3 credits
An engineering course on threat and risk informed nuclear security covering topics including: physical protection, facility characterization, consequence analysis, access control/delay, insider threats, security culture, transportation security, radiological crime scene, and nuclear forensics. **Prereq:** Science or Engineering background or instructor permission .

NE 514 Nuclear Safety
3 credits
Cross-listed with TM 514. An in-depth technical study of safety issues within the nuclear fuel cycle and within various reactor types. Evaluation methods, system disturbances, safety criteria, containment, NRC licensing, and codes for safety analysis will be presented. Case studies of reactor accidents and corrective measures included.
Prereq: Permission.

NE 516 Nuclear Rules and Regulations
3 credits
Cross-listed with TM 516.
An in-depth examination of nuclear regulatory agencies; major nuclear legislation; current radiation protection standards and organizational responsibility for their implementation.
Prereq: Permission.

NE 520 Thermodynamics of Nuclear Power Plants
3 credits
Course covers applications of First Law to power nuclear plants: boiling water, pressurized, high temperature gas, small modular and advanced nuclear power plants. Nuclear power plant applications of pressurizers, suppression pools, nuclear containment, the application of the Second Law to exergy analysis of advanced fuel cycles.
Prereq: Permission .

NE 524 Heat Exchanger Design
3 credits
This course will cover advanced heat exchanger design and apply that knowledge to the design of the following heat exchangers: tube-in-tube heat exchanger, air cooler, compact heat exchanger, feedwater heater and condenser.
Prereq: Permission .

NE 527 Nuclear Material Storage, Transportation, and Disposal
3 credits
There is a wide range of nuclear materials that are stored, transported and disposed of each day. The materials include medical radioisotopes, new fuel pellets, used fuel, and industrial radioisotopes. This course will cover the regulations that govern nuclear material storage, transportation and disposal, as well as the engineering requirements and practical aspects of handling these materials.

NE 528 Management of Nuclear Facilities
3 credits
Cross-listed with TM 538.
Nuclear facilities need a sustainable management system to make sure that matters of importance are not dealt with in isolation of other issues in the decision making process. Integrating all relevant issues, ranging from safety, security and safeguards to health and economic and environmental questions, leads to well-informed and balanced decisions. This course addresses from a practical point of view the safety and regulatory issues of operating and planned reactors in the U.S. and other countries.

NE 529 Risk Assessment
3 credits
Cross-listed with TM 529.
In-depth evaluation and analysis techniques used to determine the risk of industrial, process, nuclear, and aviation industries; fault tree analysis; human reliability analysis; failure mode and effect analysis.

NE 530 Two-Phase Flow
3 credits
Course offered only in Idaho Falls.
Treatment of fluid mechanics and heat transfer in conjunction with nuclear reactors where two-phase flow problems are found.
Prereq: Permission.

NE 535 Nuclear Criticality Safety
3 credits
Cross-listed with TM 513.
Nuclear criticality safety including nuclear physics, fusion and neutron multiplication, moderation and reflection of neutrons, criticality issues in the fuel cycle, critical experiments and sub-critical limits, calculations of criticality, nuclear criticality safety practices, emergency procedures, and nuclear regulations and standards.
Prereq: NE 450 or Permission.

NE 536 Electrochemical Engineering
3 credits
Cross-listed with CHE 536
Application of chemical engineering principles to electrochemical systems; thermodynamics, kinetics, and mass transport in electrochemical systems; electrochemical process design.

NE 537 Radiation Effects on Materials
3 credits
Joint-listed with NE 437. Cross-listed with MSE 537.
Interactions between radiation and solids.
Prereq: MSE 201 or Permission.

NE 538 Fundamentals of Nuclear Matrls
3 credits
Joint-listed with NE 438. Cross-listed with MSE 538.
This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Students who wish to receive credit for the 500 level course are required to do term-projects and advanced problems. (Spring only)
Prereq: MSE 201 or NE 450; or Permission .

NE 551 Nuclear Reactor Fuels
3 credits
Selection of materials and design of nuclear fuels, light water reactor fuels, metal and oxide dispersed fuels, high temperature ceramic fuels.
Prereq: Permission .

NE 554 Radiation Detection and Shielding
3 credits
Cross-listed with TM 535.
Radiation transport and shielding concepts. Methods for quantifying attenuation of nuclear particles and electromagnetic radiation. Radiation detection methods, data acquisition and processing.
Prereq: MATH 310 or Permission.

NE 555 Nuclear Criticality Safety II
3 credits
Course offered only in Idaho Falls.
Applications of criticality safety techniques to facility design and review, requirements for unique isotopes, criticality safety evaluations, connections to nuclear materials management, applications of monte carlo analysis.
Prereq: NE 535 or Permission .

NE 565 Reactor Engineering
3 credits
Course listed only in Idaho Falls.
Radiation shielding, materials, instrumentation and controls, separation of stable isotopes, chemical separation and processing, special techniques.
Prereq: MATH 480 or Permission.

NE 567 Advanced Nuclear Systems and Modeling
3 credits
Comprehensive information about nuclear systems (such as, nuclear steam supply systems, safety systems, etc) and analytical modeling of nuclear systems. Description of reactor technologies (such as, Boiling Water Reactor –BWR- and Pressurized Water Reactor –PWR- systems and corresponding modeling and performance of the systems. Reactor thermal hydraulics models/tools are used to model the systems. Course projects are defined for practicing modeling techniques.
Prereq: NE 565 .

NE 575 Advanced Nuclear Power Engineering
3 credits
Course offered only in Idaho Falls.
Present and advanced nuclear power plant descriptions and analysis. Engineering aspects of converting nuclear fission energy to useful work. Group project design.
Prereq: Permission.

NE 582 Spent Nuclear Fuel Management and Disposition
3 credits
Cross-listed with CHE 582
Course offered only in Idaho Falls.
The management of nuclear fuel after removal from a nuclear reactor; storage options, recycle and recovery of uranium and other radionuclides, geological repositories and related topics.
Prereq: Permission.

NE 585 Nuclear Fuel Cycles
3 credits
Cross-listed with MSE 585
Processes to support the existing LWR fuel cycle. Alternative fuel cycles including U-233, Pu239 and mixed oxide fuels, and advanced reactor concepts. Recycling and recovery of nuclear materials, with emphasis on traditional fast reactor recycle.
Prereq: Permission .

NE 598 (s) Internship
Credit arranged.

NE 599 (s) Research
Credit arranged.

NE 600 Doctoral Research & Dissertation
Credit arranged.

OPERATIONS MANAGEMENT (OM)

OM 204 (s) Special Topics
Credit arranged.

OM 298 (s) Internship
1-3 credits, max 6.

OM 299 (s) Directed Study
Credit arranged.

OM 370 Process Management
3 credits
This course examines the concepts and tools used to design, implement, manage, evaluate and improve the business processes used to create and deliver value to customers. International and ethical issues associated with process management will also be considered. May involve evening exams.
Prereq: BUS 252 and STAT 251 or STAT 301 or MATH 330.

OM 378 Project Management
3 credits
Planning, organizing, staffing, controlling, and directing an organization's resources for special projects; topics include matrix organizations, cross functional teamwork, budgeting, work breakdown structures, critical path method (CPM), program evaluation and review techniques (PERT), capacity planning, and project control. May involve evening exams.

OM 398 Internship
1-3 credits, max 6.

OM 404 (s) Special Topics
Credit arranged.

OM 439 Systems and Simulation
4 credits
Distribution theory, random numbers, modeling concepts and simulation of queuing and inventory systems. Students must have access to a laptop computer for use in class. 3 lectures and one 3 hour lab a week. May involve evening exams. May involve field trips. (Spring only)
Prereq: OM 370, CHE 453, ME 313, or MSE 453; or Permission.

OM 446 Six Sigma Innovation
3 Credits
Six Sigma is a highly structured strategy for acquiring, assessing, and applying customer, competitor, and enterprise intelligence for the purposes of product, system or enterprise innovation and design. It has two major thrusts, one that is directed toward significant innovation or improvement of an existing product, process or service that uses an approach called DMAIC (Define - Measure - Analyze - Improve - Control) and a second dedicated to design of new processes, products or services. This course focuses on the innovation aspects of Six Sigma. Recommended preparation: STAT 431. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yrs)
Prereq: STAT 251 or STAT 301.

OM 456 Quality Management
3 credits
Cross-listed with STAT 456
Principles of total quality management, with emphasis on problem solving techniques to continually improve processes; customer-driven quality, management and employee participation, statistical process control, product/process design, and process capability. May include evening exams. May involve field trips.
Prereq: STAT 251 or STAT 301.

OM 470 Supply Chain Management
3 credits
In-depth study and analysis of the supply chain management integrated approach to business with emphasis on the transportation, purchasing, packaging, inventory management, and international logistics functions, as well as issues in negotiation and relationship management. May involve evening exams.
Prereq: OM 370.

OM 472 Operations Planning and Scheduling
3 credits
In-depth study of planning and scheduling techniques with emphasis on material requirements planning. May involve evening exams and field trips.
Prereq: OM 370.

OM 498 (s) Internship
Credit arranged.

OM 499 (s) Directed Study
Credit arranged.

ORGANIZATIONAL SCIENCES (ORGS)

ORGS 110 Governance in Small Organizations
3 credits
The basics of organizational structure, leadership, interpersonal relations, fiscal responsibility, and accountability. The course is designed to serve students who may be engaged in student or community leadership positions.

ORGS 155 Financial Literacy
3 credits
Basics of financial literacy including terms and concepts. Topics include: influences on financial decisions, goal setting, spending plans, saving and organizing, controlling debt, banking, credit, housing, cars, cell phones, college, careers, life's financial phases, protecting assets, investing, and financial current events.

ORGS 204 (s) Special Topics
Credit arranged.

ORGS 210 Introduction to Organizational Sciences
1 credit
An orientation course for students interested in pursuing the Bachelors Degree in Organizational Sciences. The goal of the course is to expose students to the major specializations offered by the degree program: General Organizational Science, Workplace Relations, and Nonprofit Community Organizations.
Prereq: Completion of at least 15 credit hours of college level course work.

ORGS 305 Nonprofit Organizations
3 credits
An introduction to nonprofit organizations. The course covers the several ways that nonprofits differ from for-profit and governmental organizations: mission and values, legal distinctions, leadership and oversight, expenses and revenue, and community relations/community impact. Recommended preparation: ORGS 210.

ORGS 310 Application/Experience in Organizational Sciences
1-6 credits, max 6
Hands-on experience with a business, governmental agency, community or nonprofit organization. Students will be expected to provide a written account of their experience that both documents the time spent, and that relates the experience to other coursework.
Prereq: Permission of Instructor.

ORGS 312 Practical Gerontology
3 credits
Cross-listed with PSYC 312
Preparation for, and accommodation to, becoming older. Emphases will be on behaviors necessary to maintain physical health, and tactics necessary to maintain brain fitness. Course is appropriate for those interested in eldercare, or for any person concerned about sustaining physical health and mental wellness through the lifespan.
Prereq: PSYC 101 or ORGS 210.

ORGS 320 Budgeting for Small Organizations
1 credit
A basic introduction to budgets and the budgeting process, focusing on how to prepare, interpret, use, and manage organizational budgets to increase students' likelihood of future success.

ORGS 321 Workplace Motivation
1 credit
A review of the issues that affect worker motivation. Evidence and practical implications of forces such as workplace incentives, social and physical environment, organizational structure and tasks, external factors, and individual differences will be considered.

ORGS 322 Workplace Soft Skills
1 credit
Overall organizational performance often depends as much on soft skills (worker social skills and emotional intelligence, communication abilities, and worker professionalism) as it does on hard skills (abilities with the immediate tasks). This course reviews the evidence on the impact of soft skills.

ORGS 323 Messaging for Small Organizations
1 credit
An evaluation of the inexpensive, everyday messaging tools available to smaller organizations that can be used for issue advocacy, service/product promotion, community cohesion, and the like. The course will cover current network applications and their effectiveness including, but not limited to, social media tools.

ORGS 400 (s) Seminar
Credit arranged.

ORGS 404 (s) Special Topics
Credit arranged.

ORGS 407 Advanced Nonprofit Organizations
3 credits
Provides an in-depth exploration of nonprofit organizations and their role in society, nonprofit purpose, mission, characteristics and structure. Topics include how nonprofits differ from for-profit and governmental organizations, nonprofit industry and careers, starting a nonprofit; nonprofit operations (accountability, reporting, staffing, marketing, technology); planning, strategy, governance (boards and volunteers); nonprofit law; nonprofit programs and program evaluation.
Prereq: ORGS 305.

ORGS 410 Capstone Project in Organizational Sciences
1-6 credits, max 6
Gen Ed: Senior Experience
Completion of a project with a business, governmental agency, community or nonprofit organization. The project can be research or service-based. Students will be expected to provide a final document that details all aspects of the project. Approval of a project proposal by the student's advisor should be sought before requesting permission to enroll.
Prereq: Permission of Instructor.

ORGS 414 Traumatic Events: Preparation, Intervention, Evaluation
3 credits
Cross-listed with PSYC 414
Traumatic Events (TEs) range from local to large scale human-induced or catastrophic natural disasters (violent crimes, major accidents, weather events, etc.). This course is designed to address integral response elements: (a) preparation (e.g., organizing, planning, training, equipping) (b) intervention (e.g., multi-agency coordination, logistics, triage, first & secondary responses, volunteers, incident command, communication, mitigation, psychological first aid, media, safety, security) (c) evaluation (e.g., after-action reports, lessons learned, hotwash, best practices, research).
Prereq: PSYC 101 or Permission of Instructor.

ORGS 415 Planning Professional Conferences and Events
3 credits
Organizational planning and logistics for successful professional meetings, conferences, and other events. Considerations include themes and missions; physical, site, and technological needs; budgeting; invitees, attendees, and registrants, vendors; contracts, risk, and liabilities; and contingency planning. Recommended preparation: ORGS 210.

ORGS 435 Personnel
3 credits
Joint-listed with ORGS 535, Cross-listed with PSYC 435
Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Additional work required for graduate credit.
Prereq: PSYC 101.

ORGS 441 Human Relations in the Workplace
3 credits
Joint-listed with ORGS 541, Cross-listed with PSYC 441
Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit.
Prereq: PSYC 101.

ORGS 444 Methods and Analysis in Organizational Science
4 credits
Overview of the many tools of data gathering and analysis in the applied social sciences. Includes coverage of surveys, study design, analysis, online and bibliographic resources and archives, etc.
Prereq: STAT 251 (Off-campus and distance students may request advisor approval for a substitution for STAT 251).

ORGS 450 Training and Performance Support
3 credits
Joint-listed with ORGS 550, Cross-listed with PSYC 450
Review of applicable theory and methods for developing organizational training programs and performance support systems; emphasis will be on conducting needs analyses, development of systems and training programs to serve needs, and evaluation of program outcomes. Additional project/assignments reqd for grad cr.
Prereq: PSYC 101.

ORGS 494 (s) Research Experience in Organizational Sciences
Credit arranged, max 16
Supervised experience in conducting research in organizational performance/organizational behavior. Topics vary depending on match of student interests to those of current faculty or qualified affiliates. May include research with local business, agencies, or other entities under joint supervision of faculty and entity sponsor. Recommended preparation: ORGS 444 and consultation with ORGS advisor.
Prereq: Sophomore standing or higher.

ORGS 497 (s) Practicum in Instruction
Credit arranged.

ORGS 498 (s) Internship
Credit arranged.

ORGS 499 (s) Directed Study
Credit arranged.

ORGS 502 (s) Directed Study
Credit arranged.

ORGS 504 (s) Special Topics
Credit arranged.

ORGS 505 (s) Professional Development
Credit arranged.

ORGS 535 Personnel
3 credits
Joint-listed with ORGS 435, Cross-listed with PSYC 535
Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Additional work required for graduate credit. PSYC 535 is a cooperative course available to WSU degree-seeking students.
Prereq: PSYC 101.

ORGS 541 Human Relations in the Workplace
3 credits
Joint-listed with ORGS 441, Cross-listed with PSYC 541
Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit. PSYC 541 is a cooperative course available to WSU degree-seeking students.
Prereq: PSYC 101.

ORGS 550 Training and Performance Support
3 credits
Joint-listed with ORGS 450, Cross-listed with PSYC 550
Review of applicable theory and methods for developing organizational training programs and performance support systems; emphasis will be on conducting needs analyses, development of systems and training programs to serve needs, and evaluation of program outcomes. Additional project/assignments reqd for grad cr.
Prereq: PSYC 101.

PGA GOLF MANAGEMENT (PGA)

PGA 103 Introduction to PGA Golf Management
2 credits
This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on the history of the game, PGA Constitution, career enhancement, and the rules of golf. (Fall only)
Prereq: PGM Major.

PGA 110 PGA Golf Management Player Development
1 credit, max arranged
This course will assist PGA Golf Management students in their efforts to pass the PGA of America's Playing Ability Test (PAT) by providing access to a golf game tracking and improvement software along with individual and group golf instruction. All PGA Golf Management students must pass the PAT prior to graduation. Graded Pass/Fail.
Prereq: Marketing - PGA Golf Management major.

PGA 150 PGA Golf Management I
3 credits
This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on Tournament Operations, Golf Car Fleet Management, Golf Club Repair and Design. Other topics previewed will be Business Planning and Operations and Customer Relations.
Prereq: PGA 103.

PGA 204 (s) Special Topics
Credit arranged.

PGA 251 PGA Golf Management II
3 credits
This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on Business Communications, Business Planning & Operations, Customer Relations, and PGA/PGM Electives. Other topics previewed will be Merchandising & Inventory Management and Supervising & Delegating.
Prereq: PGA 103, PGA 150 and PGM major.

PGA 298 (s) Internship
1-3 credits, max 6.

PGA 299 (s) Directed Study
Credit arranged .

PGA 385 PGA Golf Management III
3 credits
This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on Merchandising & Inventory Management and Supervising & Delegating. Other topics previewed will be an overview of the Final Experience. (Spring only)
Prereq: PGA 103, PGA 150, and PGA 251.

PGA 386 Food and Beverage Hospitality with Lab
4 credits
Introduction to hospitality and commercial leisure enterprises. The course will include food and beverage service operation, profit and cost accounting, techniques, marketing, advertising schemes and the relationship between business and leisure programs, services, and products. Field trips required.
Prereq: PGM Major or Permission.

PGA 398 (s) Internship
1-3 credits, max 6.

PGA 404 (s) Special Topics
Credit arranged .

PGA 499 (s) Directed Study
Credit arranged.

PHILOSOPHY (PHIL)

PHIL 102 Reason and Rhetoric
2 credits
Gen Ed: Communication
Form and style of argumentative discourse; development of critical thinking and rhetorical skills as students prepare and deliver written and oral presentations; construction, evaluation, and presentation of arguments; identification of arguments and fallacies to improve abilities to organize thoughts, express them clearly and simply, and judge the suitability of material for the audience.

PHIL 103 Introduction to Ethics
3 credits
Gen Ed: Humanities
Introduction to philosophical reasoning through historical study of Western moral thought.

PHIL 200 Philosophy of Alcohol
3 credits
Gen Ed: Humanities
This course will introduce students to philosophical analysis through the topic of alcohol. Some issues we will cover are ethical: Can we exercise freewill when intoxicated? If not, can we still blame an intoxicated person for their actions? What is the nature of addiction and when are we justified in intervening on someone else's addiction? Some issues are metaphysical: Are beer styles a natural classification or merely conventional? There are also aesthetic issues: Is taste just subjective, or can we scrutinize taste objectively? Some are historical: What is the role of alcohol in the history of philosophy? This course addresses these and many other philosophical issues that can be presented through the topic of alcohol.

PHIL 201 Critical Thinking
3 credits
Gen Ed: Humanities
Acquiring and improving important skills of thinking, reading, and writing critically; emphasis on avoiding fallacies and mastering forms of valid argument in ordinary language.

PHIL 202 Introduction to Symbolic Logic
3 credits
Development of systematic techniques for assessing validity of arguments; includes categorical logic, propositional logic, and elementary quantificational logic.

PHIL 204 (s) Special Topics
Credit arranged.

PHIL 205 Topics in Social Philosophy
3 credits
This course will introduce students to topics in social philosophy through historical and contemporary readings. Topics may include (but are not limited to), treatments of race, gender, disability status, human rights, and social and political institutions.

PHIL 208 Business Ethics
3 credits
Gen Ed: Humanities
Introduction to philosophical reasoning through historical study of Western moral thought, with specific application to ethical issues related to business practice and corporate social responsibility.

PHIL 209 Mind and Madness
3 credits
Just exactly what is mental illness? Do all cases of mental illness have some physical underpinning, or is there such a thing as a disorder of thought? What might delusions tell us about the nature and structure of mind? What are the prospects for mind-body medicine? Can we be justified in forcing persons to submit to mental treatment, and under what circumstances? Is mental illness the same across cultures? This course examines these and other questions raised by the study and treatment of mental disorder, as in philosophy of mind, epistemology, action theory, metaethics, and applied ethics. The course also examines the relationship between psychiatric research, clinical practice, and social policy.

PHIL 221 Philosophy in Film
3 credits
This course uses film as a philosophical text, discussing philosophical theories and topics presented in films, both old and new. Topics typically include the nature of existence, the difference between appearance and reality, motivation, memory, personal identity, and/or authenticity. Cooperative: open to WSU degree-seeking students.

PHIL 240 Belief and Reality
3 credits
Gen Ed: Humanities
Introduction to epistemology (examination of grounds and limits of knowledge) and metaphysics (inquiry into the nature of reality) through historical and contemporary readings.

PHIL 302 Biblical Judaism: Texts and Thought
3 credits
Cross-listed with RELS 302
Analysis of the Hebrew Bible (Old Testament) and related texts with an emphasis on hermeneutics and thought.

PHIL 303 Early Christianity: Texts and Thought
3 credits
Cross-listed with RELS 303
Analysis of the New Testament and other early Christian texts of the first and second centuries C.E. with an emphasis on hermeneutics and thought.

PHIL 307 Buddhism
3 credits
Cross-listed with RELS 307
Philosophy and religion of Gautama Buddha as it developed in India, Tibet, China, and Japan.

PHIL 320 History of Ancient and Medieval Philosophy
3 credits
Philosophical thought from the early Greeks through the Middle Ages; concentration on metaphysics and theory of knowledge. Cooperative: open to WSU degree-seeking students.

PHIL 321 History of Modern Philosophy
3 credits
Critical evaluation of the thought of major figures in early modern philosophy, such as Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume, and Kant; emphasis on metaphysics and epistemology. Cooperative: open to WSU degree-seeking students.

PHIL 325 (s) Historical Figures in Philosophy
3 credits, max arranged
Study of a major philosophical figure from the history of philosophy. May be repeated for credit. Recommended preparation: one philosophy course.

PHIL 351 Philosophy of Science
3 credits
Gen Ed: Humanities
Introduction to the critical analysis of the aims and methods of science, its principles, practices, and achievements. Cooperative: open to WSU degree-seeking students.
Prereq: 3 credits of philosophy or 3 credits of natural science .

PHIL 352 Philosophy, Politics, and Economics
3 credits
Cross-listed with POLS 352
This course will introduce students to the topics and methods of Philosophy, Politics, and Economics (PPE). The approach will be interdisciplinary, with the aim of investigating and illustrating how and why these three disciplines are indispensable to addressing both the normative and factual issues each poses on its own. The course will cover basic methods in rational choice theory, game theory, social choice theory, and political philosophy to explore problems pertaining to decision-making, coordination, cooperation, and justice. The texts will include both traditional and contemporary writings on these issues.

PHIL 361 (s) Professional Ethics
3 credits, max 6
Gen Ed: Humanities
Study of ethical issues and problems arising in professions. Each section focuses on a specific area of professional ethics including, but not limited to, agricultural ethics, bioethics, business ethics, and engineering ethics.
Prereq: PHIL 103 .

PHIL 367 (s) Global Justice
3 credits, max arranged
Gen Ed: International
Topical study of issues of justice in the global context.

PHIL 400 (s) Seminar
Credit arranged .

PHIL 404 (s) Special Topics
Credit arranged.

PHIL 405 Feminism & Philosophy
3 credits
An exploration of how feminist philosophies have brought to light gender bias in western philosophy and have (re)constructed theories in metaphysics, epistemology, and ethics. Students will see how these philosophies address the experiences of women and other groups whose interests have been historically neglected and misrepresented.

PHIL 417 Philosophy of Biology
3 credits
Philosophical thinking about meaning, reference, and truth. Additional assignments required for graduate credit.
Prereq: 3 credits of biology and 3 credits of philosophy or Permission .

PHIL 426 History of Political Philosophy I
3 credits
Cross-listed with POLS 425
Perennial problems of politics examined through study of seminal authors of classical antiquity (Plato, Aristotle, Cicero); medieval confrontation of theology with classical political philosophy (Augustine, Aquinas, Marsilius).

PHIL 427 History of Political Philosophy II
3 credits
Cross-listed with POLS 426
Foundations and development of modern liberalism; analysis of its characteristic goals, and democratic, socialist, and communitarian critics of the project; study of authors including Hobbes, Locke, Rousseau, Marx, and contemporary theorists such as Rawls.

PHIL 429 Contemporary Political Ethics
3 credits
Cross-listed with POLS 429
Current controversies concerning status and substance of ethical claims about deception, violence, coercion, and economic justice in politics and public action.

PHIL 441 Genes and Justice: Comparative Biotechnology Policy Formation
3 credits
Cross-listed with POLS 441
This course introduces students to the basic theoretical, ethical, and practical issues surrounding the rise and regulation of recent biotechnological and biomedical advances, including genetically modified animals and plants in agriculture, stem cell research and cloning in biomedical research, and reprogenetics in medically assisted reproductive technology. Students will learn about theoretical and ethical frameworks to investigate questions of domestic and international policy making and the task of governing modern biosciences, including food safety, fair-trade, consumer well-being, informed choice in medical treatment, conservation, biodiversity, and sustainability. Recommended Preparation: PLSC 207 or 3 credits of another science course or 3 credits of political science.

PHIL 442 Philosophy of Mind
3 credits
Joint-listed with PHIL 542
Survey of current philosophical theories of the nature of minds and mental states, including forms of dualism, reductive physicalism, functionalism, and eliminative materialism. Additional assignments required for graduate credit. Recommended Preparation: PHIL 202 and PHIL 240. Cooperative: open to WSU degree-seeking students.

PHIL 443 Philosophy of Language
3 credits
Joint-listed with PHIL 543
Philosophical thinking about meaning, reference, and truth. Additional assignments required for graduate credit. Recommended Preparation: Phil 202 and 240. Cooperative: available to WSU degree-seeking students.

PHIL 450 Ethics in Science
3 credits
An investigation of social and ethical issues in scientific research and the place of ethics in a scientific worldview.
Prereq: PHIL 103, PHIL 201, PHIL 202, or PHIL 240; or Permission .

PHIL 452 Environmental Philosophy
3 credits
Joint-listed with PHIL 552, Cross-listed with ENVS 552
Philosophical examination of various ethical, metaphysical, and legal issues concerning humans, nature, and the environment; issues covered may include biodiversity and species protection, animal rights, radical ecology, environmental racism, wilderness theory, population control, and property rights. Additional projects/assignments required for graduate credit.

PHIL 460 Ethical Theory
3 credits
Critical analysis of classical consequentialist and deontic views as well as one or more recent theories such as emotivism and prescriptivism, feminist ethics, communitarianism, or virtue ethics.

PHIL 469 The Judicial Process
3 credits
Judicial and legal processes, court structure, procedures; judicial behavior and decision-making; selection of judges. Additional projects/assignments reqd for grad cr.

PHIL 470 Philosophy of Law
3 credits
Analysis of fundamental philosophical issues in law and legal systems, including the nature of law, relation of law to morality, judicial method, and nature and ascription of rights. Recommended Preparation: PHIL 103. Cooperative: open to WSU degree-seeking students.

PHIL 490 Senior Seminar
3 cr
Gen Ed: Senior Experience
Required of all philosophy majors; capstone course devoted to mastery of the philosophical essay; topics will vary.
Prereq: Senior standing or completion of 24 credits in philosophy.

PHIL 496 Teaching Methods in Philosophy
2 credits, max 4
Learn methods of teaching while assisting in an introductory-level philosophy course. Graded P/F.
Prereq: four upper-division courses in philosophy, the introductory course in which the student will participate, and permission of department.

PHIL 498 (s) Internship
Credit arranged .

PHIL 499 (s) Directed Study
Credit arranged.

PHIL 500 Master's Research & Thesis
Credit arranged.

PHIL 501 (s) Seminar
Credit arranged
Graded P/F.
Prereq: Permission.

PHIL 502 (s) Directed Study
Credit arranged.

PHIL 503 (s) Workshop
Credit arranged .

PHIL 504 (s) Special Topics
Credit arranged.

PHIL 543 Philosophy of Language
3 credits
Joint-listed with PHIL 443
Philosophical thinking about meaning, reference, and truth. Additional assignments required for graduate credit. Recommended Preparation: Phil 202 and 240. Cooperative: open to WSU degree-seeking students.

PHIL 552 Environmental Philosophy
3 credits
Joint-listed with PHIL 452, Cross-listed with ENVS 552
Philosophical examination of various ethical, metaphysical, and legal issues concerning humans, nature, and the environment; issues covered may include biodiversity and species protection, animal rights, radical ecology, environmental racism, wilderness theory, population control, and property rights. Additional projects/assignments required for graduate credit.

PHIL 553 Ethical Practice in Natural Resource and Environmental Science
3 credits
This course will investigate some of the ethical dimensions of a life in professional science. While it is open to non-scientists, the course is part of the University of Idaho's Professional Science Master's Program, so it will be addressed directly to professional scientists. As its title indicates, its specific focus will be on natural resource and environmental sciences.

PHIL 599 (s) Research
Credit arranged.

PHYSICAL ED--ACTIVITY COURSES (PEB)

PEB 106 (s) Individual & Dual Sports
1 credit, max arranged
Bowling, racket sports, fencing, golf, gymnastics, conditioning, backpacking, cycling, cross-country skiing, etc. Two days of field trips may be a part of the course requirements for such activities as backpacking, cycling, etc. Two hrs a wk. Graded P/F.

PEB 107 (s) Team Sports
1 credit, max arranged
Field sports, volleyball, basketball, and softball. Two hrs a wk. Graded P/F.

PEB 108 (s) Water-Based Sports & Fit Act
1 credit, max arranged
All forms of physical activity performed in the water, including all levels of proficiency in swimming (beginning, intermediate, and advanced), diving, water fitness activities, and scuba. Two hrs a wk. Graded P/F.

PEB 200 (s) Seminar
Credit arranged.

PEB 204 (s) Special Topics
Credit arranged.

PEB 405 (s) Professional Development
Credit arranged.

PEB 505 (s) Professional Development
Credit arranged.

PHYSICAL ED--PROFESSIONAL (PEP)

PEP 100 Introduction to Exercise Science & Health
1 credit
Introduction to foundational content, subdisciplines of study in exercise science, and fields of health. Students will also gain an understanding of career opportunities within the areas of exercise science & health. (Fall only)

PEP 107 Movement Fundamentals
1 credit
Skill development and teaching knowledge of the fundamentals and concepts of movement. Two lec-labs a wk.

PEP 132 Skill and Analysis of Striking and Net/Wall Activities
1 credit
This course is designed to develop proficiency in basic skills, strategies, tactics, error detection and correction, rules, teaching skills and curricular models for striking and net/wall activities (e.g. tennis, badminton, pickleball, volleyball, softball, cricket, etc.). Lec-lab.

PEP 133 Skill and Analysis of Target and Invasion Activities
1 credit
This course is designed to develop proficiency in basic skills, strategies, tactics, error detection and correction, rules, teaching skills and curricular models for target and invasion activities (e.g. golf, bowling, basketball, soccer, team handball, hockey, football, ultimate Frisbee, etc.). Lec-lab.

PEP 134 Skill and Analysis of Recreation and Outdoor Activities
1 credit
This course is designed to develop proficiency in basic skills, strategies, rules, ethics, teaching skills and designing teaching progressions and curricular models for recreation and outdoor activities (e.g. snow shoeing, wall climbing, orienteering, geocaching, skating, bicycling, hiking/walking, jogging, camping). Field trips required.

PEP 135 Skill and Analysis of Basketball and Volleyball
1 credit
Skill development and knowledge of teaching progressions, techniques, strategies, and analysis and correction of skills in basketball and volleyball. Two lec-labs a wk.

PEP 136 Skill and Analysis of Soccer and Speedball
1 credit
Skill development and knowledge of teaching progressions, techniques, strategies, and analysis and correction of skills in soccer and speedball. Two lec-labs a wk.

PEP 161 Introduction to Physical Education
1 credit
Introduction to the field of physical education teaching and coaching, professional and portfolio development, and national and state standards. (Fall only)

PEP 171 Athletic Training Clinical Experience I - Observation
1 credit
Introductory clinical experience and insight into the profession of Athletic Training. Students will receive supervised clinical education experience in UI's Athletic Training Room. Students will complete the application process into the clinical experience portion of the Athletic Training major in this course. 40 hours/clinical observation. Graded P/F. (Spring only)
Prereq: Permission.

PEP 200 (s) Seminar
Credit arranged.

PEP 203 (s) Workshop
Credit arranged.

PEP 204 (s) Special Topics
Credit arranged.

PEP 275 Moral Reasoning in Sport
2 credits
Joint-listed with PEP 475
PEP 275: Current ethical issues in sport, such as performance-enhancing drugs, mechanization, cheating, eligibility; challenges students to creatively examine their beliefs.

PEP 299 (s) Directed Study
Credit arranged.

PEP 300 Applied Human Anatomy and Biomechanics
3 credits
This course is designed to provide the student with the anatomical and biomechanical knowledge essential to conduct a systematic qualitative analysis of human movement in clinical, educational, performance, and wellness settings. Two hrs of lec, two hrs of lab per wk.
Prereq: BIOL 120 or permission.

PEP 301 Mental Training
2 credits
Students will learn and apply mental training skills that are necessary for developing a personalized peak performance program.
Prereq: Permission. Enrollment is restricted to students who are highly engaged in performance activities such as athletes, performing artists, military cadets, etc.

PEP 305 Applied Sports Psychology
3 credits
Overview of key psychological issues in physical education and sport including competition, personality, anxiety, motivation, self-confidence, imagery, and stress management; practical applications of psychological concepts of youth sports and development of key psychological skills for competition.

PEP 350 Elementary Health and Physical Education
3 credits
Specific methods, research, curricula, and media in teaching elementary health and physical education. Three lecture/lab hours per week and 15 hours of practicum work in the schools and community.
Prereq or **Coreq:** EDCI 327, EDCI 328, and EDCI 329 .

PEP 360 Motor Behavior
3 credits
Overview of development, control, and learning throughout the lifespan. Four hrs of lec-lab a wk.
Prereq or **Coreq:** BIOL 120.

PEP 380 Assessment & Research in Physical Education Pedagogy
3 credits
This course will develop learner competencies of assessment and research in physical activity pedagogy. Lec-lab course.
Prereq: MVSC 201 or Permission
Coreq: PEP 440 .

PEP 400 (s) Seminar
Credit arranged.

PEP 403 (s) Workshop
Credit arranged.

PEP 404 (s) Special Topics
Cr arranged.

PEP 405 (s) Professional Development
Credit arranged
Cr earned may not be applied toward grad degree programs but may be accepted for fifth-yr certification. Professional development in physical education and sport professional personnel. Additional projects/assignments reqd for grad cr.

PEP 409 Concepts in Strength and Conditioning
3 credits
This course provides students with the theory and practice of resistance training that prepares students to take certification exams such as the National Strength and Conditioning Association Certified Strength and Conditioning Specialist (CSCS) exam. There are two lectures and one lab per week.

PEP 412 Elementary Methods in Physical Activity Pedagogy
3 credits
This course focuses on the study and application of effective teaching behaviors, methods and curricular models, and the process of planning, implementing, and evaluating teaching and administering a program at the elementary level . A practicum with elementary students is required during this course. Lecture-lab.
Prereq: Admission to teacher education program and MVSC 201, PEP 107, PEP 133, PEP 360 and PEP 413 or by permission .

PEP 413 Foundations and Assessment in Physical Activity Pedagogy
3 credits
This course will develop learner competencies in the foundations of physical education, i.e. profession, professional standards, philosophical, cultural, historical and social aspects of physical education and physical activity pedagogy; and assessment, research and technology in physical activity pedagogy.
Prereq: MVSC 201 and PEP 132 and PEP 133 and PEP 134 .

PEP 418 Physiology of Exercise
2 credits
Effects of physical activity on the circulatory, respiratory, and other systems.
Prereq: MVSC 201, BIOL 120 and BIOL 121; or Permission
Coreq: PEP 418L.

PEP 418L Physiology of Exercise Laboratory
1 credit
Laboratory section for PEP 418. Study of the impacts of exercise on energy metabolism, the cardiovascular system, and skeletal muscle.
Prereq: MVSC 201, BIOL 120 and BIOL 121; or Permission
Coreq: PEP 418 .

PEP 421 Secondary Methods in Physical Activity Pedagogy
3 credits
This course focuses on the study and application of effective teaching behaviors, methods and curricular models, and the process of planning, implementing, and evaluating teaching and administering a program at the secondary level . A practicum with middle and high school students is required during this course. Lecture-lab.
Prereq: Admission to teacher education program and MVSC 201, PEP 132, PEP 134, PEP 300 or by permission .

PEP 424 Inclusive Physical Education and Recreation
3 credits
Cross-listed with REC 424
To provide an overview of movement and physical activities in physical education and recreational settings for individuals with disabilities. Emphasis will be on history, etiology, characteristics, services, resources, professional competencies, and instructional strategies. Practical experience (16 hrs in the community) is required to enhance instructional abilities to adapt and create an inclusive physical education and recreational setting for all participants.
Prereq: Senior standing or Permission.

PEP 440 Curriculum & Administration in Physical Activity Pedagogy
1 credit
This course is designed to develop students' knowledge of curriculum and administration models, and community programming related to physical activity pedagogy.
Prereq: Admission to teacher education program
Prereq or **Coreq:** PEP 360, PEP 380, and six professional activity courses .

PEP 455 Design & Analysis of Research in Movement Sciences
3 credits
Cross-listed with H&S 455 and REC 455
This course is designed to survey the basic types of research methods often found in exercise science and health; and recreation. A variety of research designs and computerized statistical analyses are studied to help students understand the systematic nature of problem solving. Various research problems as they relate to exercise science and health; and recreation are discussed for the purpose of identifying the broad and diverse nature of research in the movement, leisure, and health professions. (Spring only)
Prereq: Junior or Senior standing.

PEP 463 Physical Activity, Health and Metabolic Disease
3 credits
Joint-listed with PEP 563
An introduction to the history of physical activity and health, adaptations to training, and benefits of physical activity as related to specific metabolic disease states and conditions (e.g., insulin resistance). Students will be required to read and discuss pertinent literature in physical activity and health. Additional projects/assignments reqd for grad cr.
Prereq: PEP 418.

PEP 471 Athletic Training Clinical Experience VI
1 credit
Students participate in supervised clinical education experience in UI¿s Athletic Training Room applying athletic training knowledge and skills learned in previous course work.
Prereq: PEP 372 and Permission .

PEP 472 Athletic Training Clinical Experience VII
1 credit
Students participate in supervised clinical education experience in UI¿s Athletic Training Room applying athletic training knowledge and skills learned in previous course work.
Prereq: PEP 471 and Permission .

PEP 475 Moral Reasoning in Sport
2 credits
Joint-listed with PEP 275
PEP 275: Current ethical issues in sport, such as performance-enhancing drugs, mechanization, cheating, eligibility; challenges students to creatively examine their beliefs.

PEP 484 (s) Internship in Physical Education Teaching
1-14 credits
Guided observation, supervised instruction, and comprehensive team and independent teaching in elementary and secondary school settings. Students will be following the school district full semester calendar. Graded P/F.
Prereq: Admission to teacher education program and PETE faculty approval
Coreq: EDCI 401.

PEP 493 Fitness Assessment and Prescription
3 credits
Development of skills in exercise testing, data interpretation, and prescription for health related fitness. Two lec and 2 hrs of lab per wk. (Spring only)
Prereq: Senior Standing and PEP 418; or Permission .

PEP 495 (s) Practicum
1 credit, max arranged
Supervised field work.
Prereq: Permission.

PEP 498 (s) Internship in Exercise Science & Health
Credit arranged
Gen Ed: Senior Experience
Supervised field work.
Prereq: MVSC 445, H&S 288, H&S 490, PEP 455, PEP 493, and PEP 495; or Permission .

PEP 499 (s) Directed Study
Credit arranged.

PEP 500 Master's Research and Thesis
Credit arranged.

PEP 501 (s) Seminar
Credit arranged.

PEP 502 (s) Directed Study
Credit arranged.

PEP 503 (s) Workshop
Credit arranged.

PEP 504 (s) Special Topics
Credit arranged.

PEP 505 (s) Professional Development
Credit arranged
Joint-listed with PEP 405.

PEP 518 Advanced Physiology of Exercise
3 credits
Principles and methods essential to the experimental approach to understand how the human body responds to short-term bouts of exercise and subsequently adapts to exposure to long-term exercise training. Two lectures per week.

PEP 522 Pedagogy Applied to Health, Physical Education, Recreation, and Dance
3 credits
Provides theoretical and practical skills in the study and analysis of the teaching and learning process in health, physical education, recreation, and dance.

PEP 523 Physical Activity Assessment and Enrichment
3 credits
This course is designed to focus learners on physical activity assessment and enrichment research with specific application to active travel, community, park, school site, and workplace physical activity.

PEP 530 Contemporary Issues in Health and Activity
3 credits
Studies of individual and community behavior, theories, policies and current issues related to health and activity; examination of research and development of research and grant proposals. (Fall only)

PEP 544 Program Development
3 credits
Developing programs associated with physical education and sport science using current conceptual frameworks and models. Field-testing of programs may be required.

PEP 560 Sport Psychology
3 credits
Provides an understanding of how psychological factors influence performance and how simple and easy-to-use mental training techniques may be employed to enhance performance and enjoyment; using the Coaches' Guide to Sport Psychology and accompanying workbook, teachers/coaches will address such important psychological topics as peak performance, motivation, communication, leadership, self-confidence, concentration, stress management, imagery, goal setting, arousal control, and mental plans/performance routines; workbook exercises, case studies, and hands-on projects will teach mental training principles and help practitioners develop skills that they can successfully use to enhance performance with their students/athletes. (Fall only)

PEP 561 Motivation in Sport and Recreation
3 credits
Practical, hands-on course designed to teach basics of motivation to physical educators, coaches, and recreation professionals; major achievement motivation theories and primary antecedents and consequences of motivated behavior; five major motivational enhancement strategies including goal setting, personal science, competition, feedback, and reinforcement; guidelines for maximizing effectiveness; analysis of applied motivation questions such as dropouts/burnouts, peak performance, exercise adherence, injury rehabilitation, increasing enjoyment, designing reward systems, and positive parental involvement. (Spring only)

PEP 563 Physical Activity, Health and Metabolic Disease
3 credits
Joint-listed with PEP 463
An introduction to the history of physical activity and health, adaptations to training, and benefits of physical activity as related to specific metabolic disease states and conditions (e.g., insulin resistance). Students will be required to read and discuss pertinent literature in physical activity and health. Additional projects/assignments reqd for grad cr.

PEP 570 Ethical Practice and Communication in Physical Activity
3 credits
Problem solving approach to communication and practice of ethics in physical activity. (Fall only)

PEP 598 (s) Internship
Credit arranged
Supervised field experience in an appropriate public or private agency. Graded P/F.
Prereq: Permission.

PEP 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

PEP 600 Doctoral Research and Dissertation
Credit arranged.

PEP 699 Non-Dissertation Doctoral Research
Credit arranged
Research not directly related to dissertation.
Prereq: Enrollment to a doctoral program .

PHYSICS (PHYS)

PHYS 100 Fundamentals of Physics
3 credits
Gen Ed: Natural and Applied Sciences
Carries no credit after PHYS 111 or PHYS 211. For students in nontechnical fields. Conceptual study of laws of nature and their application, including mechanics, heat, electricity and magnetism, light, and modern physics. Three lec per week. (Fall only)

PHYS 100L Fundamentals of Physics Lab
1 credit
Gen Ed: Natural and Applied Sciences
For students in nontechnical fields. Conceptual study of laws of nature and their application, including mechanics, heat, electricity and magnetism, light, and modern physics. One 2-hour lab per week. (Spring only)

PHYS 103 General Astronomy
3 credits
Gen Ed: Natural and Applied Sciences
Descriptive and physical astronomy; development of astronomical thought; properties and evolution of the solar system, stars, galaxies, and the universe. (Fall only)

PHYS 104 Astronomy Lab
1 credit
Gen Ed: Natural and Applied Sciences
Naked eye, telescopic, and photographic observations of constellations, stars, and planets. One 2-hr lab per wk. (Fall only)
Prereq or **coreq:** PHYS 103.

PHYS 111 General Physics I
3 credits
Gen Ed: Natural and Applied Sciences
Carries no credit after PHYS 211. Kinematics, forces and dynamics, conservation laws, thermodynamics, waves. Three lec and one recitation per wk.
Prereq: MATH 143.

PHYS 111L General Physics I Lab
1 credit
Gen Ed: Natural and Applied Sciences
Kinematics, forces and dynamics, conservation laws, thermodynamics, waves. One 2-hour lab per week.
Prereq: MATH 143.
Coreq: PHYS 111.

PHYS 112 General Physics II
3 credits
Gen Ed: Natural and Applied Sciences
Carries no credit after PHYS 212. Electricity, magnetism, optics, and modern physics. Three lec and one recitation per wk. (Spring only)
Prereq: PHYS 111/PHYS 111L.

PHYS 112L General Physics II Lab
1 credit
Gen Ed: Natural and Applied Sciences
Electricity, magnetism, optics, and modern physics. One 2-hour lab per week.
Prereq: PHYS 111/PHYS 111L.
Coreq: PHYS 112.

PHYS 200 (s) Physics Seminar
1 credit
Introductory-level discussion of topics in modern physics; introduction to physics research topics and scientific information search techniques; written and/or oral reports of a pertinent topic in current physics. (Fall only)

PHYS 203 (s) Workshop
Credit arranged.

PHYS 204 (s) Special Topics
Credit arranged.

PHYS 211 Engineering Physics I
3 credits
Gen Ed: Natural and Applied Sciences
Kinematics and dynamics, Newton's laws, work and energy, rotational dynamics, linear and angular momentum, collisions, static equilibrium, oscillations, gravity and central forces. Three lec and one recitation per wk.
Prereq or **Coreq:** MATH 170.

PHYS 211L Laboratory Physics I
1 credit
Gen Ed: Natural and Applied Sciences
Kinematics and dynamics, Newton's laws, work and energy, rotational dynamics, linear and angular momentum, collisions, static equilibrium, oscillations, gravity, central forces, and thermodynamics. One 2-hr lab per wk.
Coreq:PHYS 211.

PHYS 212 Engineering Physics II
3 credits
Gen Ed: Natural and Applied Sciences
Electric fields and potentials, magnetic fields, capacitance and inductance, DC and AC circuits, electromagnetic waves. Three lec and one recitation per wk.
Prereq: PHYS 211/PHYS 211L.
Prereq or **Coreq:** MATH 175.

PHYS 212L Laboratory Physics II
1 credit
Gen Ed: Natural and Applied Sciences
Electric fields and potentials, magnetic fields, capacitance and inductance, DC and AC circuits, electromagnetic waves, mechanical waves, and geometric optics. One 2-hr lab per wk.
Coreq: PHYS 212.

PHYS 213 Engineering Physics III
3 credits
Fluid dynamics, waves in elastic media, sound waves, temperature, heat and thermodynamics, kinetic theory, geometric and physical optics. Three lec and one recitation per wk. (Spring only)
Prereq: PHYS 211/PHYS 211L.
Prereq or **coreq:** MATH 175.

PHYS 299 (s) Directed Study
Credit arranged.

PHYS 305 Modern Physics
3 credits
Quantum and relativity theories with applications to atomic, solid state, nuclear, and elementary particle physics. (Spring only)
Prereq: PHYS 212/PHYS 212L.
Coreq: MATH 275 and PHYS 213 .

PHYS 321 Analytical Mechanics
3 credits
Review of single-particle kinematics and dynamics; linear oscillations; Lagrangian dynamics; orbital dynamics; motion in non-inertial systems; space rotation of rigid bodies.
Prereq: PHYS 212/PHYS 212L and MATH 275
Coreq: MATH 310.

PHYS 333 Statistical Thermodynamics
3 credits
Cross-listed with CHEM 495
Classical thermodynamics, entropy, thermodynamic potentials, kinetic theory, classical and quantum statistical mechanics, ensembles, partition functions, introduction to phase transitions.
Prereq: CHEM 306 or PHYS 305 or equivalent.

PHYS 341 Electromagnetic Fields I
3 credits
This course is designed to provide undergraduate physics majors advanced instruction in electrostatics. The specific areas which will be covered are electric fields, electric potentials, work and energy in electrostatics, the technique of using the concept of image charges to solve for the electric field and electric potential of complex charge distributions, Laplace's and Poisson's equations, electric dipoles, polarization and polarizable materials, and the electric dipole approximation
Prereq: PHYS 212, PHYS 212L and MATH 275.

PHYS 342 Electromagnetic Fields II
3 credits
This course is designed to provide undergraduate physics majors advanced instruction in electrodynamics and magnetism. The specific areas that will be covered are magnetostatics, magnetic fields in matter, the vector potential, electrodynamics, the complete set of Maxwell's equations, electromagnetic waves, waveguides, electric and magnetic dipole radiation, retarded and advanced potentials, and radiation arising from accelerated charges and charge distributions
Prereq: PHYS 341.

PHYS 351 Introductory Quantum Mechanics I
3 credits
One-dimensional theory; free particle, bound states, potential barriers, harmonic oscillator, matrix methods, and Dirac notation; interpretations of quantum theory.
Prereq: PHYS 305, PHYS 371
Coreq: MATH 330.

PHYS 371 Mathematical Physics
3 credits
Cross-listed with MATH 371
Mathematical techniques needed in upper-division physics courses, including vector analysis, matrices, Sturm-Liouville problems, special functions, partial differential equations, complex variables.
Prereq: PHYS 212/PHYS 212L and MATH 275.

PHYS 400 (s) Seminar
Credit arranged.

PHYS 403 (s) Workshop
Credit arranged.

PHYS 404 (s) Special Topics
Credit arranged.

PHYS 407 Communicating Science
1 credit
Gen Ed: Senior Experience
Writing scientific abstracts, manuscripts, and grant proposals; peer review; presenting concepts to scientists in oral and poster form; communicating to non-scientists.
Prereq Junior or Senior Standing.

PHYS 411 Advanced Physics Lab
4 credits
Research skills, group dynamics, scientific literature research/drafting, automation and design techniques to prepare students for post-graduate life in a physics laboratory setting. 1-hr distributed lecture time and 3-hr effective lab time per week. Some weeks require scheduling machine utilization time outside of standard class hours per student
Prereq: PHYS 305 or Permission.

PHYS 428 Numerical Methods
3 credits
Joint-listed with PHYS 528, Cross-listed with ENGR 428, MATH 428
Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications. Additional projects and/or assignments required for graduate credit in PHYS 528.
Prereq: MATH 310.

PHYS 438 Biological Physics
3 credits
Joint-listed with PHYS 538
Physics principles applied to biological systems including organisms, cells, and biomolecules. Techniques for studying biological systems and phenomena. Additional projects/assignments required for graduate credit.
Prereq for PHYS 438: PHYS 212 or PHYS 213; Junior or Senior standing.
Prereq for PHYS 538: Graduate Standing or Permission.

PHYS 443 Optics
3 credits
Joint-listed with PHYS 543
Geometrical optics, wave optics and physical optics with emphasis on modern instrumentation and methods of measurement. Additional projects/assignments required for graduate credit.
Prereq for PHYS 443: PHYS 342.
Prereq for PHYS 543: Admission to Physics Graduate program or Permission.

PHYS 464 Materials Physics and Engineering
3 credits
Joint-listed with PHYS 564, Cross-listed with MSE 464
Materials for circuits, Magnetism and magnetic materials, Ferroelectric and piezoelectric materials, Semiconductors, Optical properties of semiconductor for optoelectronics, thermal properties, electron band theory, superconductivity. Additional projects/assignments required for graduate credit. (Spring only)
Prereq: Senior standing in an Engineering or Physics major, or PHYS 305 and PHYS 321;or Permission.

PHYS 465 Nuclear and Particle Physics
3 credits
Joint-listed with PHYS 565
Particle production and detection, properties and classification of particles, the quark model of hadrons, symmetries and conservation laws, interactions, grand unification, the strong interaction and nuclear forces, models for nuclear structure and reactions. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq for PHYS 465: PHYS 305.
Prereq for PHYS 565: Admission to physics graduate program or Permission.

PHYS 484 Astrophysics
3 credits
Joint-listed with PHYS 584
Celestial mechanics; planets and planetary systems; structure and evolution of stars and star systems; special and general relativity; cosmology. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq for PHYS 484: PHYS 305 or MATH 275; or Permission.
Prereq for PHYS 584: Admission to physics graduate program or Permission.

PHYS 490 Research
1-6 credits, max 6
Undergraduate research or thesis.
Prereq: Permission of Instructor.

PHYS 492 Senior Research
1 credit
Gen Ed: Senior Experience
Undergraduate research in one of the department focus areas. Scientific communication through one presentation to the scientific community and one written report.
Prereq Junior or Senior Standing; or Permission of Instructor.

PHYS 498 (s) Internship
Credit arranged.

PHYS 499 (s) Directed Study
Credit arranged.

PHYS 500 Master's Research and Thesis
Credit arranged.

PHYS 501 (s) Seminar
Credit arranged
Graded P/F.
Prereq: Permission.

PHYS 502 (s) Directed Study
Credit arranged.

PHYS 503 (s) Workshop
Credit arranged.

PHYS 504 (s) Special Topics
Credit arranged.

PHYS 521 Advanced Mechanics
3 credits
Classical mechanics; Lagrange's and Hamilton's principles, two-body problem, rigid body motion, special relativity, canonical transformation, Hamilton-Jacobi theory, small oscillations, and Lagrangian and Hamiltonian formulations for continuous systems and fields. Cooperative: open to WSU degree-seeking students.
Prereq: PHYS 322.

PHYS 528 Numerical Methods
3 credits
Joint-listed with PHYS 428, Cross-listed with MATH 529
Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications. Additional projects and/or assignments required for graduate credit in PHYS 528.
Prereq: MATH 310.

PHYS 533 Statistical Mechanics
3 credits
Ensembles, partition functions, classical and quantum statistics renormalization group, criticality, scaling, interacting systems, simulation. Cooperative: open to WSU degree-seeking students.
Prereq: PHYS 333.

PHYS 538 Biological Physics
3 credits
Joint-listed with PHYS 438
Physics principles applied to biological systems including organisms, cells, and biomolecules. Techniques for studying biological systems and phenomena. Additional projects/assignments required for graduate credit.
Prereq for PHYS 438: PHYS 212 or PHYS 213; Junior or Senior standing.
Prereq for PHYS 538: Graduate Standing or Permission.

PHYS 541 Electromagnetic Theory I
3 credits
Analytical tools and techniques describing electromagnetic phenomena, particularly Maxwell's equations, electrostatic and magnetostatic systems, including currents and their interactions and boundary value problems. Cooperative: open to WSU degree-seeking students.
Prereq: PHYS 342.

PHYS 542 Electromagnetic TheoryII
3 credits
Further examinations of the analytical tools and techniques that describe electromagnetic phenomena, particularly electrodynamics, the general theory of emission, propagation and absorption of electromagnetic waves, and the relativistic formulation of electrodynamics. Cooperative: open to WSU degree-seeking students.
Prereq: PHYS 541.

PHYS 543 Optics
3 credits
Joint-listed with PHYS 443
Geometrical optics, wave optics and physical optics with emphasis on modern instrumentation and methods of measurement. Additional projects/assignments required for graduate credit.
Prereq for PHYS 443: PHYS 342.
Prereq for PHYS 543: Admission to Physics Graduate program or Permission.

PHYS 550 Quantum Mechanics I
3 credits
Fundamental concepts, base kets and matrix representation, position and momentum space; Schroedinger and Heisenberg picture, Schroedinger's wave equation and solutions; theory of angular momentum. Cooperative: open to WSU degree-seeking students.
Prereq: PHYS 351.

PHYS 551 Quantum Mechanics II
3 credits
Theory of angular momentum continued; symmetries in quantum mechanics; approximation methods, time-dependent and time-independent perturbation theory, applications to atomic systems; radiation theory, theory of scattering. Cooperative: open to WSU degree-seeking students.
Prereq: PHYS 550.

PHYS 564 Materials Physics and Engineering
3 credits
Joint-listed with PHYS 464, Cross-listed with MSE 564
Materials for circuits, Magnetism and magnetic materials, Ferroelectric and piezoelectric materials, Semiconductors, Optical properties of semiconductor for optoelectronics, thermal properties, electron band theory, superconductivity. Additional projects/assignments required for graduate credit. (Spring only)
Prereq: Senior standing in an Engineering or Physics major, or PHYS 305 and PHYS 321;or Permission.

PHYS 565 Particle and Nuclear Physics
3 credits
Joint-listed with PHYS 465
Particle production and detection, properties and classification of particles, the quark model of hadrons, symmetries and conservation laws, interactions, grand unification, the strong interaction and nuclear forces, models for nuclear structure and reactions. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq for PHYS 465: PHYS 305.
Prereq for PHYS 565: Admission to physics graduate program or Permission.

PHYS 571 Mathematical Methods of Physics
3 credits
Methods and problems. Cooperative: open to WSU degree-seeking students.
Prereq: PHYS 322 or Permission.

PHYS 584 Astrophysics
3 credits
Joint-listed with PHYS 484
Celestial mechanics; planets and planetary systems; structure and evolution of stars and star systems; special and general relativity; cosmology. Additional projects/assignments required for graduate credit.
Prereq for PHYS 484: PHYS 305 or MATH 275; or Permission.
Prereq for PHYS 584: Admission to physics graduate program or Permission.

PHYS 598 (s) Internship
Credit arranged.

PHYS 599 (s) Research
Credit arranged.

PHYS 600 Doctoral Research and Dissertation
Credit arranged.

PLANT PATHOLOGY (PLP)

PLP 404 (s) Special Topics
Credit arranged.

PLP 415 Plant Pathology
3 credits
Joint-listed with PLP 515
Biology of diseases and disorders of crop, forest, and ornamental plants, with emphasis on plant-microbe interactions and on disease cause, development, diagnosis, and control. Three 1-hour lectures. (Fall only)
Prereq: BIOL 154 and BIOL 155; or BIOL 250; and PLSC 102; or Permission.

PLP 416 Plant Pathology Lab
1 credit
Joint-listed with PLP 516
As a companion course to PLP 415/515 Plant Pathology, this laboratory course increases student knowledge about plant diseases caused by environmental factors and microorganisms. This laboratory course provides hands#on training in the identification and classification of representative plant diseases, including isolation and culturing techniques for plant pathogenic fungi, bacteria, nematodes and viruses.
Prereq: BIOL 154 and BIOL 155 or BIOL 250 and 255 and PLSC 102, or permission.
Coreq: PLP 415/515.

PLP 500 Master's Research and Thesis
Credit arranged.

PLP 501 (s) Seminar

PLP 502 (s) Directed Study

PLP 504 (s) Special Topic
Plp 504 (s) Special Topics (cr arr).

PLP 511 Viruses and Virus Diseases of Plants
4 credits
Nature of plant viruses, vector-virus relationships and virus diseases of plants. Includes laboratory section.
Prereq: BIOL 154 and BIOL 155 or BIOL 250 and 255 and PLSC 102 or permission.

PLP 515 Plant Pathology
3 credits
Joint-listed with PLP 415
Biology of diseases and disorders of crop, forest, and ornamental plants, with emphasis on plant-microbe interactions and on disease cause, development, diagnosis, and control. Three 1-hour lectures. (Fall only)
Prereq: BIOL 154 and BIOL 155; or BIOL 250; and PLSC 102; or Permission.

PLP 516 Plant Pathology Lab
1 credit
Joint-listed with PLP 416
As a companion course to PLP 415/515 Plant Pathology, this laboratory course increases student knowledge about plant diseases caused by environmental factors and microorganisms. This laboratory course provides hands#on training in the identification and classification of representative plant diseases, including isolation and culturing techniques for plant pathogenic fungi, bacteria, nematodes and viruses.
Prereq: BIOL 154 and BIOL 155 or BIOL 250 and 255 and PLSC 102, or permission.
Coreq: PLP 415/515.

PLP 522 Plant Bacteriology
3 credits
The purpose of this class is to provide current information on the biology of plant associated bacteria, including plant pathogens and beneficial microbes. Topics addressed will include bacterial morphology, taxonomy, genetics, and ecology. Diagnosis, disease management, and the molecular basis of host-pathogen interactions will be presented.
Prereq: PLP 415/ 515 and BIOL 154 and 155 or BIOL 250 and 255 or permission.

PLP 600 (s) Doctoral Research and Dissertation
Credit arranged.

PLANT SCIENCE (PLSC)

PLSC 100 Survey/Plant & Soil Sciences
1-3 credits, max 3
This course is designed to introduce students to a scientific examination of the soil and plant relationships that affect the production and propagation of field crops and landscape plants. Topics include soils, irrigation, crop and weed identification, diseases, insects and plant growth regulators. (Spring only)

PLSC 102 The Science of Plants in Agriculture
3 credits
Principles of structure, biology, and management of agronomic and horticultural crops; interaction of crop plants and cropping systems with environment; current issues related to plant science. Two lecture and one 2-hr lab a week.

PLSC 201 Principles of Horticulture
3 credits
An introduction to the production and management of edible and ornamental horticultural crops and the maintenance of plants and turf in urban landscapes. Two lecture and two hours of lab a week; two field trips. (Spring, alt/yrs)
Prereq: PLSC 102.

PLSC 204 (s) Special Topics
Credit arranged.

PLSC 205 General Botany
4 credits
Growth, development and ecology of plants, fungi, and protists in relation to their environments. Recommended Preparation: CHEM 101 and PLSC 102. (Spring only)
Prereq: BIOL 114 or BIOL 115.

PLSC 207 Introduction to Biotechnology
3 credits
Cross-listed with GENE 207
Offers an overview of modern biotechnology, focusing on basic concepts and applications of biotechnology with regards to plants, animals, environment and microorganisms, and medicine. Recommended preparation: CHEM 101 or CHEM 111. (Fall, alt even/yrs)

PLSC 212 Master Gardener
1-3 credits, max 3
Basic horticultural skills required for home gardeners and landscapers, including soil, water, and fertility management, composting, pest and disease identification and management, vegetable and fruit culture, ornamentals, plant propagation, and lawn care. Graded P/F. Field trips.

PLSC 300 Plant Propagation
3 credits
Sexual and asexual propagation techniques of herbaceous and woody ornamental plants; propagation methods covered including seed, cuttings, layering, grafting, and cloning/tissue culture. Two lectures and one 3-hour lab a week. (Alt/yrs)
Prereq: PLSC 102, PLSC 201, or BIOL 115.

PLSC 338 Weed Control
4 credits
Nature and scope of weed problems, identification and biology of weeds, principles, theory, and practice of mechanical, chemical, and biological control of weeds; legal considerations; integration of methods into functional management systems. Two lectures and one 3-hour lab a week. Recommended Preparation: PLSC 102 or equivalent.

PLSC 340 Nursery Management
3 credits
Management of commercial nurseries from plant propagation through sale of the plants. Cooperative: open to WSU degree-seeking students. (Alt/yrs)

PLSC 341 Nursery Management Laboratory
1 credit
Lab study relevant to PLSC 340. Experiments on and demonstrations of different practices used in nurseries. One 2-hr lab a wk; one 1-day field trip. Cooperative: open to WSU degree-seeking students.
Coreq: PLSC 340.

PLSC 398 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: Permission of department.

PLSC 400 (s) Seminar
1 credit.

PLSC 401 Plant Physiology
3 credits
Application of physiological principles to the management of plants in agronomic, horticultural and forest systems. (Spring, alt even/yrs)
Prereq: PLSC 205 or BIOL 115 and BIOL 115L or Permission.

PLSC 402 Undergraduate Research in Plant Science
1-6 credits, max 6
This course offers credits to students interested in gaining first-hand experience in today's plant research. Each student will acquire research skills by conducting laboratory or field research on a well-defined topic agreed to by the student and by a faculty supervisor. Students must receive permission from that supervisor prior to enrolling. This course is open to all undergraduates, and may be taken multiple times.
Prereq: PLSC 205.

PLSC 404 (s) Special Topics
Credit arranged.

PLSC 405 (s) Professional Development
Credit arranged.

PLSC 407 Field Crop Production
3 credits
Management and use of crops in Idaho and the Northwest.

PLSC 408 Cereal Science
3 credits
Crop history and biology of major cereal crops, emphasizing cool season cereals. Recommended Preparation: BIOL 115.

PLSC 410 Invasive Plant Biology
3 credits
Joint-listed with PLSC 510
Biology, ecology, and physiology of weeds with emphasis on crop and weed interactions. Requirements for grad cr include comprehensive term paper and class presentation on weed-crop interaction. Two lec and one 3-hr lab a wk. Cooperative: open to WSU degree-seeking students. (Alt/yrs)

PLSC 419 Plant Community Restoration Methods
2 credits
Students will participate in classroom discussions surrounding topics that are important to modification and implementation of a restoration plan. Students will also participate in practical, hands-on activities during laboratory periods. Those activities include operation of equipment for cultivation and seeding, calibration of herbicide sprayers, calibration of drills, transplanting techniques, monitoring and evaluation of restoration projects and visits to restoration projects.
Prereq: REM 221, equivalent or permission.

PLSC 433 Plant Tissue Culture Techniques
3 credits
Joint-listed with PLSC 533
Laboratory-oriented course involving tissue culture techniques with an emphasis on regenerating herbaceous and woody plant species from organs or tissues. Requirements for grad cr include completion of a special project and report. One lec and 5 hrs of lab a wk. Recommended Preparation: PLSC 300. (Alt/yrs)

PLSC 438 Pesticides in the Environment
3 credits
Gen Ed: Senior Experience
Cross-listed with ENT 438 and SOIL 438
Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Recommended Preparation: CHEM 275.

PLSC 440 Advanced Laboratory Techniques
4 credits
Cross-listed with GENE 440
Intensive hypothesis-driven laboratory course that will prepare the student for research in molecular biology; emphasis on areas of microbial physiology, microbial genetics, immunology, and pathogenic microbiology. (Spring only)
Prereq: BIOL 250.

PLSC 446 Plant Breeding
3 credits
Joint-listed with PLSC 546
Application of genetic principles to improvement of crop plants. Grad students reqd to complete additional term paper. (Alt/yrs)
Prereq: GENE 314 or Equivalent.

PLSC 451 Vegetable Crops
3 credits
Joint-listed with PLSC 551
Production, physiology, storage, and marketing of major and minor vegetable, herb, and spice crops from a worldwide perspective. Recommended preparation: PlSc 201, PlSc 205, PlSc 300 or equivalents. Cooperative: available to WSU degree-seeking students.
Prereq: PLSC 102 or equivalent.

PLSC 464 Landscape Maintenance
3 credits
Use and culture of landscape plants to enhance the environment. Two lec and one 2-hr lab a wk; one 1-day field trip. Recommended Preparation: SOIL 205 and LARC 288. (Alt/yrs)
Prereq: PLSC 102 or BIOL 213 or Permission.

PLSC 476 Cell Biology
3 credits
Joint-listed with PLSC 576
Introduction to the organization and function of the major components of the eukaryotic cell; emphasis on the composition of cells, the structures and assembly processes of molecules that make up cells, diversity of cell types found in multicellular organisms, and how common interacting processes are coordinately controlled. Extra oral and/or written assignments reqd for graduate credit. (Spring, Alt/yrs)
Prereq: BIOL 115 and either BIOL 300 or BIOL 380.

PLSC 480 Field Trip
1 credit, max 3
Three-day field trip to production areas.
Prereq: Permission.

PLSC 486 Plant Biochemistry
3 credits
Joint-listed with PLSC 586
An in-depth introduction to metabolic processes carried out by plants, some fungi, and some alga with emphasis on cell wall synthesis, hormone synthesis, and photosynthesis. Extra oral and/or written assignments reqd for grad cr. (Spring, alt/years)
Prereq: BIOL 300 or BIOL 380.

PLSC 488 Genetic Engineering
3 credits
Joint-listed with PLSC 588, Cross-listed with GENE 488
Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)
Prereq: GENE 314 or BIOL 310.

PLSC 490 Potato Science
3 credits
Joint-listed with PLSC 590
History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Requirements for graduate credit include comprehensive term paper and class presentation on selected topic. Cooperative: open to WSU degree-seeking students.

PLSC 498 (s) Internship
Credit arranged.

PLSC 499 (s) Directed Study
Credit arranged.

PLSC 500 Master's Research and Thesis
Credit arranged.

PLSC 501 (s) Seminar
Credit arranged.

PLSC 502 (s) Directed Study
Credit arranged.

PLSC 503 (s) Workshop
Credit arranged.

PLSC 504 (s) Special Topics
Credit arranged.

PLSC 505 (s) Professional Development
Credit arranged.

PLSC 510 Invasive Plant Biology
3 credits
Joint-listed with PLSC 410
Biology, ecology, and physiology of weeds with emphasis on crop and weed interactions. Requirements for grad cr include comprehensive term paper and class presentation on weed-crop interaction. Two lec and one 3-hr lab a wk. PLSC 410 is a cooperative course open to WSU degree-seeking students. (Alt/yrs)

PLSC 523 Potato Industry Field Trip
1 credit
Six-day field trip to see the southern Idaho potato industry. Experience production, storage, biotechnology, seed, fresh pack and processing, equipment, food science, and agribusiness. One additional class meeting. The course is offered every other year.

PLSC 533 Plant Tissue Culture Techniques
3 credits
Joint-listed with PLSC 433
Laboratory-oriented course involving tissue culture techniques with an emphasis on regenerating herbaceous and woody plant species from organs or tissues. Requirements for grad cr include completion of a special project and report. One lec and 5 hrs of lab a wk. Recommended Preparation: PLSC 300. Cooperative: open to WSU degree-seeking students. (Alt/yrs)

PLSC 542 Biochemistry
3 credits
Maximum of 7 credits in any combination of BIOL 380, PLSC 542, and BIOL 554. Intermediate biochemistry; intro to metabolism and the chemical and physical properties of biomolecules. (Fall only)
Prereq: CHEM 372; BIOL 380 or **Coreq:** CHEM 302 or 306; or Permission.

PLSC 546 Plant Breeding
3 credits
Joint-listed with PLSC 446
Application of genetic principles to improvement of crop plants. Grad students reqd to complete additional term paper. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: GENE 314 or Equivalent.

PLSC 547 Biometrics for Plant Scientists
3 credits
Use of biometrical techniques in research with particular emphasis on designing, analyzing, and interpreting agricultural and biological experiments; application of statistical methods to biological experiments and problems that may be encountered when applying these techniques to biological systems. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: PLSC 102 and STAT 431 or Equivalent.

PLSC 551 Vegetable Crops
3 credits
Joint-listed with PLSC 451
Production, physiology, storage, and marketing of major and minor vegetable, herb, and spice crops from a worldwide perspective. Recommended preparation: PlSc 201, PlSc 205, PlSc 300 or equivalents. Cooperative: open to WSU degree-seeking students.
Prereq: PLSC 102 or equivalent.

PLSC 576 Cell Biology
3 credits
Joint-listed with PLSC 476
Introduction to the organization and function of the major components of the eukaryotic cell; emphasis on the composition of cells, the structures and assembly processes of molecules that make up cells, diversity of cell types found in multicellular organisms, and how common interacting processes are coordinately controlled. Extra oral and/or written assignments reqd for graduate credit. (Spring, Alt/yrs)
Prereq: BIOL 115 and either BIOL 300 or BIOL 380.

PLSC 586 Plant Biochemistry
3 credits
Joint-listed with PLSC 486
An in-depth introduction to metabolic processes carried out by plants, some fungi, and some alga with emphasis on cell wall synthesis, hormone synthesis, and photosynthesis. Extra oral and/or written assignments reqd for grad cr. (Spring, alt/years)
Prereq: BIOL 300 or BIOL 380.

PLSC 588 Genetic Engineering
3 credits
Joint-listed with PLSC 488, Cross-listed with GENE 588
Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)
Prereq: GENE 314 or BIOL 310.

PLSC 590 Potato Science
3 credits
Joint-listed with PLSC 490
History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Requirements for graduate credit include comprehensive term paper and class presentation on selected topic. Cooperative: open to WSU degree-seeking students.

PLSC 597 (s) Practicum
Credit arranged.

PLSC 598 (s) Internship
Credit arranged.

PLSC 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

PLSC 600 Doctoral Research and Dissertation
Credit arranged.

POLITICAL SCIENCE (POLS)

POLS 101 American National Government
3 credits
Gen Ed: Social Science, American Diversity
Introduction to the study of politics focusing on basic concepts, processes, and institutions; emphasis on government and politics of the U.S. examined in comparative perspective; probable topics include nature of constitutional democracy, ideology, parties and elections, and formation of public policy.

POLS 152 Politics and Pollution
1 credit
Political, government, and administrative aspects of overcoming air, water, and other types of pollution of our environment.

POLS 200 (s) Seminar
Credit arranged.

POLS 203 (s) Workshop
Credit arranged.

POLS 204 (s) Special Topics
Credit arranged.

POLS 205 Introduction to Comparative Politics
3 credits
Gen Ed: Social Science, International
Basic structures, patterns, and sociocultural environment of foreign political systems; includes case studies of the government and politics in selected countries.

POLS 207 Introduction to Political Behavior
3 credits
This course is an introduction to the political behavior of the American electorate. The basic goals of this course are to explain political behavior and investigate the consequences of it. In this course, we will primarily focus on voter turnout; however, we will also discuss other forms of political participation (e.g., giving money), vote choice, partisanship, and ideology. We will address the following questions: Who votes? How have voting rates changed over time? What influences why some people vote? Who votes for whom? In order to address these questions, we will explore literatures, controversies, and theories of political behavior.

POLS 208 Introduction to Political Philosophy
3 credits
This course will introduce students to the practice and diverse products of political philosophy or normative political theory. Unlike theories in other areas of Political Science, which are typically focused on attempts to provide explanations and predictions regarding empirical phenomena, political philosophy is focused more on normative questions regarding how we ought to arrange our political affairs and how we ought to understand key morally laden concepts, such as obligation, rights, justice, and equality.

POLS 209 Introduction to Public Policy
3 credits
The study of public policy focuses on how political actors and institutions define public problems, generate solutions to solve them, and evaluate the consequences of those solutions. The course will focus on institutional arrangements for making public policy decisions, the role of various actors – including those from the private and non-profit sectors – in shaping policy outcomes, and the fundamentals of analytic approaches to public policy.

POLS 235 Political Research Methods and Approaches
3 credits
Introduction to the study of politics, including scope of the discipline, principal fields, research design, and methods of political research and analysis.

POLS 237 Introduction to International Politics
3 credits
Gen Ed: Social Science, International
Survey of approaches used to describe and explain conflict and cooperation among states in the international system; special emphasis on games of strategic interaction.

POLS 275 American State and Local Government
3 credits
Gen Ed: Social Science
American state and local politics from a comparative perspective; focus on parties, interest groups, voting behavior, legislative and executive government, judiciary, intergovernmental relations, and public policies.

POLS 299 (s) Directed Study
Credit arranged
Graded P/F.
Prereq: Permission.

POLS 307 Institutions of the European Union
3 credits
Gen Ed: Social Science, International
Cross-listed with FLEN 307
A cross-cultural examination of the European Union, its history, evolution, and current functioning; social, cultural, and political differences among union partners; economic structure and demographics; business culture.

POLS 331 American Political Parties and Elections
3 credits
Gen Ed: Social Science
Development and present character of American political parties and of electoral system, functions of parties in periods of relative consensus and of critical choice regarding fundamental principles, party reform, and future prospects for party system.

POLS 332 American Congress
3 credits
Gen Ed: Social Science
Roles and functions of Congress in the American political system, theories of representation, recruitment of legislators, Congressional organization and behavior, power structure, relationship to the executive, courts, interest groups, and public.

POLS 333 American Political Culture
3 credits
Gen Ed: Social Science, American Diversity
Relation of public opinion and political action and affiliation to broad economic, social, religious, and intellectual developments.

POLS 336 Political Research Methods and Approaches II
3 credits
Course covers advanced research design, social science quantitative methods and data collection issues.
Prereq: POLS 235.

POLS 338 American Foreign Policy
3 credits
Gen Ed: Social Science, International
Analysis of how key decision makers, such as the President and Congress, convert inputs from the international, national, and societal systems into foreign policy outputs.

POLS 352 Philosophy, Politics, and Economics
3 credits
Cross-listed with PHIL 352
This course will introduce students to the topics and methods of Philosophy, Politics, and Economics (PPE). The approach will be interdisciplinary, with the aim of investigating and illustrating how and why these three disciplines are indispensable to addressing both the normative and factual issues each poses on its own. The course will cover basic methods in rational choice theory, game theory, social choice theory, and political philosophy to explore problems pertaining to decision-making, coordination, cooperation, and justice. The texts will include both traditional and contemporary writings on these issues.

POLS 364 Politics of the Environment
3 credits
Cross-listed with NRS 364
Political factors that influence formation, implementation, and impact of public policies aimed at protecting the environment.

POLS 381 European Politics
3 credits
Gen Ed: Social Science, International
Examination of political processes in European parliamentary systems; topics include parties and elections, coalition formation and dissolution, public policy, and the dynamics of the European Union.

POLS 384 African Politics
3 credits
Cross-listed with IS 384
Exploration of the politics of African countries, beginning with the historical roots of colonialism and decolonization, but concentrating on contemporary issues of state building, war and conflict, development, democratization, and international and regional relations.

POLS 385 Political Psychology
3 credits
Gen Ed: International
The main goal of this course is to provide students with a general understanding of the cognitive biases that influence the choices and behavior of individuals in the realm of global politics. Topics include but are not limited to: loss aversion, personality and beliefs, group influence, analogical reasoning, and emotion. Substantive examples will be drawn from research in International Relations and Comparative Politics. As such, the course will cover the psychology of international conflict, civil war, voting behavior, and public opinion.

POLS 400 (s) Seminar
Credit arranged.

POLS 403 (s) Workshop
Credit arranged.

POLS 404 (s) Special Topics
Credit arranged.

POLS 410 Game Theory
3 credits
Joint-listed with POLS 510
The study of strategic interaction in which an outcome depends upon an individual's own decision and the choices made by others; introduction to the basic tools of game theory used to conceptualize and model political problems as games, including situations involving conflict, cooperation, contracts between agents and principals, coordination, and bargaining. Additional projects/assignments reqd for grad cr.

POLS 420 Introduction to Asian Politics
3 credits
Gen Ed: International
Joint-listed with POLS 520
This course will offer both a country-based and thematic survey of political systems and issues in Asia. Countries to be covered will include (but not be limited to) China, Japan, India, Indonesia, Thailand, and Pakistan. The course will also cover topics such as democratization, economic development, and the changing Asian security environment. Additional projects and/or assignments required for graduate credit. Recommended Preparation: POLS 205. (Spring only)

POLS 423 Politics, Policy and Gender
3 credits
Joint-listed with POLS 523
Examination of the gendered social construction of political processes, outputs, and public policy formation on the national and international level. Study of the historical evolution of women's participation in American politics as well as other countries. Analysis of the politics of gendered representation and political leadership in American politics and elsewhere. Additional projects/assignments reqd for grad cr.

POLS 425 History of Political Philosophy I
3 credits
Joint-listed with POLS 525, Cross-listed with PHIL 426
Perennial problems of politics examined through study of seminal authors of classical antiquity (Plato, Aristotle, Cicero); medieval confrontation of theology with classical political philosophy (Augustine, Aquinas, Marsilius). Additional projects/assignments reqd for grad cr.

POLS 426 History of Political Philosophy II
3 credits
Joint-listed with POLS 526, Cross-listed with PHIL 427
Foundations and development of modern liberalism; analysis of its characteristic goals, and democratic, socialist, and communitarian critics of the project; study of authors including Hobbes, Locke, Rousseau, Marx, and contemporary theorists such as Rawls. Additional projects/assignments reqd for grad cr.

POLS 428 American Political Thought
3 credits
Joint-listed with POLS 528
Major themes and debates in the American search for political self-understanding; topics include representative democracy, religion and politics, the frontier and its legacy, and individualism vs. communitarian claims; study of original sources (Founding Fathers, Thoreau, Lincoln, Populists) and contemporary implications. Additional projects/assignments reqd for grad cr.

POLS 429 Contemporary Political Ethics
3 credits
Joint-listed with POLS 529, Cross-listed with PHIL 429
Current controversies concerning status and substance of ethical claims about deception, violence, coercion, and economic justice in politics and public action. Additional projects/assignments reqd for grad cr.

POLS 430 Political Participation Internship
1-9 credits, max 9
Directed student internship as a participant-observer in the political process, work during a campaign with a candidate, party, or interest group. Graded P/F.
Prereq: Permission.

POLS 437 American Presidency
3 credits
Roles, power, and functions of the presidency; relationships with other structures and institutions in the U.S. political system. Additional projects/assignments reqd for grad cr.
Prereq: Senior standing or Permission.

POLS 439 Public Policy
3 credits
Joint-listed with POLS 539
Processes by which domestic policies are formulated and administered; analysis of intentional and unintentional impact of these policies on society. Additional projects/assignments reqd for grad cr.

POLS 440 (s) International Organizations & International Law
3 credits
Cross-listed with IS 440
League of Nations, United Nations, and role of international law in international relations; the UN's contribution to international security and economic and social development.

POLS 441 Genes and Justice: Comparative Biotechnology Policy Formation
3 credits
Gen Ed: International
Joint-listed with POLS 541, Cross-listed with PHIL 441
This course introduces students to the basic theoretical, ethical, and practical issues surrounding the rise and regulation of recent biotechnological and biomedical advances, including genetically modified animals and plants in agriculture, stem cell research and cloning in biomedical research, and reprogenetics in medically assisted reproductive technology. Students will learn about theoretical and ethical frameworks to investigate questions of domestic and international policy making and the task of governing modern biosciences, including food safety, fair-trade, consumer well-being, informed choice in medical treatment, conservation, biodiversity, and sustainability. Additional projects/assignments required for graduate credit. Recommended Preparation: PLSC 207 or 3 credits of another science course or 3 credits of political science.

POLS 449 World Politics and War
3 credits
Gen Ed: International
Joint-listed with POLS 549
A critical analysis of several competing theories that explain why wars occur; some focus on the attempts to control and eliminate warfare as a tool of international diplomacy. Additional projects/assignments required for graduate credit.

POLS 451 Public Administration
3 credits
Environment of public administration, politics of organizations, public decision-making, public relations, leadership, personnel administration, financial administration, administration ethics; related topics.

POLS 454 Public Organization Theory
3 credits
Joint-listed with POLS 554
Organization theory and behavior in public and nonprofit sector, organization structure and environment, individual behavior in organizations. Additional projects/assignments reqd for grad cr.

POLS 458 Management Internship
1-9 credits, max 9
Directed internship in an agency of federal, state, or local government or special projects involving federal, state, or local government. One cr for each week of internship work. Graded P/F.
Prereq: Permission.

POLS 459 Legislative Internship
1-9 credits, max 9
Directed internship in a national, state, municipal, or corporate legislative body. Supervised work experience. Report required. Graded P/F.
Prereq: Permission.

POLS 462 Natural Resource Policy
3 credits
Cross-listed with NRS 462
Political and institutional context for making natural resource policy; emphasis on interaction between private and public sectors and the federal, state, and tribal governments, including an examination of topical issues in natural resource politics.

POLS 467 Constitutional Law
3 credits
Joint-listed with POLS 567
The Supreme Court as a constitutional policymaker; federal jurisdiction; constitutional principles concerning judicial review, federalism, implied powers, separation of powers, and due process. Additional projects/assignments reqd for grad cr.

POLS 468 Civil Liberties
3 credits
Gen Ed: American Diversity
Joint-listed with POLS 568
The Supreme Court and its role in protecting civil liberties; freedom of speech, press, and religion; due process, the Bill of Rights, and its application to the states; criminal justice. Additional projects/assignments required for graduate credit.

POLS 471 Intergovernmental Relations
3 credits
Joint-listed with POLS 571
Analysis of fiscal and administrative interdependencies among governmental units in the U.S., with an emphasis on public policies. Additional projects/assignments reqd for grad cr.

POLS 472 Local Government Politics and Administration
3 credits
Joint-listed with POLS 572
Politics, structure, and problems of American cities and other local governments; focus on the urban political economy, the fiscal and social challenges, and the links between public and private sectors; changing social and political functions of American cities and metropolitan fragmentation. Additional projects/assignments reqd for grad cr.

POLS 474 Public Opinion and Political Behavior
3 credits
From this course, you will understand the measurement, structure, and dynamics of public opinion, both what influences it, as well as how it shapes other aspects of politics and public life, including: the character of political attitudes, party identification, turnout and participation, and the vote decision. You will also understand different modes of political participation including conventional and non-conventional and their correlates.

POLS 480 Politics of Development
3 credits
Gen Ed: International
Joint-listed with POLS 580
Role of the state in development, political economy of change, transition to democracy in the Third World, problems of ethnic conflict, overpopulation, and poverty. Additional projects/assignments reqd for grad cr.

POLS 487 Political Violence and Revolution
3 credits
Gen Ed: International
Joint-listed with POLS 587
Survey of the dominant theories attempting to understand the conditions under which humans rebel against their government; from political demonstrations and riots to terrorism to revolution; special emphasis given to the revolutions in Iran and Vietnam. Additional projects/assignments required for graduate credit.

POLS 490 Senior Experience
3 credits
Gen Ed: Senior Experience
Required of all political science majors; capstone course devoted to mastery of inquiry in political science research; topics will vary.
Prereq: Senior standing and 24 credits in political science.

POLS 498 (s) Internship
Credit arranged.

POLS 499 (s) Directed Study
Credit arranged
Graded P/F.
Prereq: Permission.

POLS 500 Master's Research and Thesis
Credit arranged
Graded P/F.

POLS 501 (s) Seminar
Credit arranged
Areas normally offered incl U.S. politics, U.S. foreign policy, African and Asian politics, community power and politics, U.S. political thought, public law, public administration, and political development. One 2-day field trip is authorized for the seminar in public administration.
Prereq: Permission.

POLS 502 (s) Directed Study
Credit arranged.

POLS 503 (s) Workshop
Credit arranged.

POLS 504 (s) Special Topics
Credit arranged.

POLS 510 Game Theory
3 credits
Joint-listed with POLS 410
The study of strategic interaction in which an outcome depends upon an individual's own decision and the choices made by others; introduction to the basic tools of game theory used to conceptualize and model political problems as games, including situations involving conflict, cooperation, contracts between agents and principals, coordination, and bargaining. Additional projects/assignments reqd for grad cr.

POLS 520 Introduction to Asian Politics
3 credits
Joint-listed with POLS 420
This course will offer both a country-based and thematic survey of political systems and issues in Asia. Countries to be covered will include (but not be limited to) China, Japan, India, Indonesia, Thailand, and Pakistan. The course will also cover topics such as democratization, economic development, and the changing Asian security environment. Additional projects and/or assignments required for graduate credit. Recommended Preparation: POLS 205. (Spring only)

POLS 523 Politics, Policy and Gender
3 credits
Joint-listed with POLS 423
Examination of the gendered social construction of political processes, outputs, and public policy formation on the national and international level. Study of the historical evolution of women's participation in American politics as well as other countries. Analysis of the politics of gendered representation and political leadership in American politics and elsewhere. Additional projects/assignments reqd for grad cr.

POLS 525 History of Political Philosophy I
3 credits
Joint-listed with POLS 425
Perennial problems of politics examined through study of seminal authors of classical antiquity (Plato, Aristotle, Cicero); medieval confrontation of theology with classical political philosophy (Augustine, Aquinas, Marsilius). Additional projects/assignments reqd for grad cr.

POLS 526 History of Political Philosophy II
3 credits
Joint-listed with POLS 426
Foundations and development of modern liberalism; analysis of its characteristic goals, and democratic, socialist, and communitarian critics of the project; study of authors including Hobbes, Locke, Rousseau, Marx, and contemporary theorists such as Rawls. Additional projects/assignments reqd for grad cr.

POLS 528 American Political Thought
3 credits
Joint-listed with POLS 428
Major themes and debates in the American search for political self-understanding; topics include representative democracy, religion and politics, the frontier and its legacy, and individualism vs. communitarian claims; study of original sources (Founding Fathers, Thoreau, Lincoln, Populists) and contemporary implications. Additional projects/assignments reqd for grad cr.

POLS 529 Contemporary Political Ethics
3 credits
Joint-listed with POLS 429
Current controversies concerning status and substance of ethical claims about deception, violence, coercion, and economic justice in politics and public action. Additional projects/assignments reqd for grad cr.

POLS 535 Advanced Political Science and Research Methods
3 credits
Course covers advanced research design, social science quantitative methods and data collection issues.

POLS 539 Public Policy
3 credits
Joint-listed with POLS 439
Processes by which domestic policies are formulated and administered; analysis of intentional and unintentional impact of these policies on society. Additional projects/assignments reqd for grad cr.

POLS 541 Genes and Justice: Comparative Biotechnology Policy Formation
3 credits
Joint-listed with POLS 441
This course introduces students to the basic theoretical, ethical, and practical issues surrounding the rise and regulation of recent biotechnological and biomedical advances, including genetically modified animals and plants in agriculture, stem cell research and cloning in biomedical research, and reprogenetics in medically assisted reproductive technology. Students will learn about theoretical and ethical frameworks to investigate questions of domestic and international policy making and the task of governing modern biosciences, including food safety, fair-trade, consumer well-being, informed choice in medical treatment, conservation, biodiversity, and sustainability. Additional projects/assignments required for graduate credit. Recommended Preparation: PLSC 207 or 3 credits of another science course or 3 credits of political science.

POLS 549 World Politics and War
3 credits
Joint-listed with POLS 449
A critical analysis of several competing theories that explain why wars occur; some focus on the attempts to control and eliminate warfare as a tool of international diplomacy. Additional projects/assignments required for graduate credit.

POLS 552 Administrative Law and Regulation
3 credits
Legal and judicial constraints on administration action, rule-making, adjudication, and other modes of administrative action. Additional projects/assignments reqd for grad cr.

POLS 554 Public Organization Theory
3 credits
Joint-listed with POLS 454
Organization theory and behavior in public and nonprofit sector, organization structure and environment, individual behavior in organizations. Additional projects/assignments reqd for grad cr.

POLS 555 Public Administration Theory
3 credits
Major writers in public administration theory and concepts such as leadership, supervision, authority, decision-making, and human relations.

POLS 556 Governmental Policy and Program Analysis
3 credits
Techniques used to analyze policy alternatives and to evaluate program; developing program objectives, management by objectives, productivity analysis, program evaluation, and policy analysis.

POLS 557 Governmental Budgeting
3 credits
Theory and practice of budgeting in a political environment; focus on potentials and limitations of various budgeting systems, particular viz the federal experience.

POLS 558 Research Methods for Local Government and Community Administration
3 credits
This course will provide research tools to students interested in local and community administration. Topics will include research design, inferential statistics, regression analysis, binary dependent variable modeling with application to policy analysis and performance measurement, and program evaluation.
Prereq: STAT 251.

POLS 559 Field Based Research
3 credits
This course gives in-service MPA graduate students the opportunity to conduct applied research under faculty supervision. Research projects will be selected according to the needs of the agency, student interest, and with faculty approval.

POLS 565 Local Government Law
3 credits
The course examines the major legal issues involving local government, including tax and spending, public employment contracts, delivery of services and tort liability. Also covered are the relationship problems such as inter-local conflicts and the manner in which state governments and the federal government impact local government. This course also will provide practical instruction on the functions and procedures of municipal governing bodies, municipal courts, and planning and zoning boards.

POLS 566 Local Economic Development
3 credits
Local economic development (LED) is an essential dimension of communities' wellbeing. This course focuses on local economic development theories, analytical tools, and strategies and their application including analysis of local economy and formulation of local economic development plan. It prepares students interested in a career position in local economic development or in local government and nonprofit fields in general.
Prereq: Graduate standing .

POLS 567 Constitutional Law
3 credits
Joint-listed with POLS 467
The Supreme Court as a constitutional policymaker; federal jurisdiction; constitutional principles concerning judicial review, federalism, implied powers, separation of powers, and due process. Additional projects/assignments reqd for grad cr.

POLS 568 Civil Liberties
3 credits
Joint-listed with POLS 468
The Supreme Court and its role in protecting civil liberties; freedom of speech, press, and religion; due process, the Bill of Rights, and its application to the states; criminal justice. Additional projects/assignments required for graduate credit.

POLS 571 Intergovernmental Relations
3 credits
Joint-listed with POLS 471
Analysis of fiscal and administrative interdependencies among governmental units in the U.S., with an emphasis on public policies. Additional projects/assignments reqd for grad cr.

POLS 572 Local Government Politics and Administration
3 credits
Joint-listed with POLS 472
Politics, structure, and problems of American cities and other local governments; focus on the urban political economy, the fiscal and social challenges, and the links between public and private sectors; changing social and political functions of American cities and metropolitan fragmentation. Additional projects/assignments reqd for grad cr.

POLS 575 Public Personnel Administration
3 credits
Personnel administration in public agencies; history of the personnel and merit systems; recruitment; selection, training, and evaluation of administrators; collective bargaining and political activity in public service; personnel administration and democracy.

POLS 580 Politics of Development
3 credits
Joint-listed with POLS 480
Role of the state in development, political economy of change, transition to democracy in the Third World, problems of ethnic conflict, overpopulation, and poverty. Additional projects/assignments reqd for grad cr.

POLS 587 Political Violence and Revolution
3 credits
Joint-listed with POLS 487
Survey of the dominant theories attempting to understand the conditions under which humans rebel against their government; from political demonstrations and riots to terrorism to revolution; special emphasis given to the revolutions in Iran and Vietnam. Additional projects/assignments required for graduate credit.

POLS 598 (s) Internship
Credit arranged.

POLS 599 (s) Research
Credit arranged.

POLS 600 Doctoral Research and Dissertation
Credit arranged
Graded P/F.

PSYCHOLOGY (PSYC)

PSYC 101 Introduction to Psychology
3 credits
Gen Ed: Social Science
Intro to psychology topics, including sensation and perception, learning and thinking, motivation, personality and adjustment, social processes, psychological testing; emphasis on fundamental principles.

PSYC 200 (s) Seminar
Credit arranged
Prereq: PSYC 101.

PSYC 201 Survey of Contemporary Psychology
1 credit
Introduces students to the psychology major, the psychology faculty, and current research in psychology. Each week a different faculty member will discuss the history, methods, major findings, and recent developments in his or her main areas of study.
Prereq: PSYC 101.

PSYC 203 (s) Workshop
Credit arranged
Prereq: PSYC 101.

PSYC 204 (s) Special Topics
Credit arranged
Prereq: PSYC 101.

PSYC 215 Quantitative Methods in Psychology
3 credits
Primarily for majors in psychology. Introduction to data analytic techniques used by psychologists.
Prereq: PSYC 101 and completion of a math or statistics course (MATH 108, MATH 123, MATH 130, MATH 143, MATH 160, MATH 170, or STAT 251).

PSYC 218 Introduction to Research in the Behavioral Sciences
4 credits
Primarily for majors in psychology. Logic and method of empirical research in the behavioral sciences; design, execution, and reporting of psychological experimentation and research. Three lec and one 2-hr lab a wk.
Prereq: PSYC 101.
Prereq or **Coreq:** PSYC 215 or STAT 251.

PSYC 299 (s) Directed Study
Credit arranged
Prereq: PSYC 101.

PSYC 305 Developmental Psychology
3 credits
Conception through late adolescence; genetics, anatomy, physiology, biological changes during development, learning, socialization, cognition, and personality.
Prereq: PSYC 101 or EDCI 301.

PSYC 310 Psychology of Personality
3 credits
Theories of personality, basic concepts, techniques of measurement, and experimental methods; the normal personality.
Prereq: PSYC 101.

PSYC 311 Abnormal Psychology
3 credits
Nature, causes, treatment, and prevention of patterns of emotional disturbances and personality disorders, including neuroses and psychoses.
Prereq: PSYC 101.

PSYC 312 Practical Gerontology
3 credits
Cross-listed with ORGS 312
Preparation for, and accommodation to, becoming older. Emphases will be on behaviors necessary to maintain physical health, and tactics necessary to maintain brain fitness. Course is appropriate for those interested in eldercare, or for any person concerned about sustaining physical health and mental wellness through the lifespan.
Prereq: PSYC 101 or ORGS 210.

PSYC 315 Psychology of Women
3 credits
Gen Ed: American Diversity
This course will cover the empirical research regarding gender differences in domains that are of particular interest to women. These topics will include but not be limited to women in the workplace, cognitive and socialization differences, work-family issues, sexuality, childhood, adolescence, motherhood, identity, and intimate relationships. (Spring, alt/yrs)
Prereq: PSYC 101.

PSYC 317 Explore Mentoring & Leadership
3 credits
Cross-listed with INTR 316 and SOC 316
Through the study of both mentoring as well as leadership, this course will prepare students to become effective mentors, citizens and members of the larger community. The course will cover a broad range of topics including: mentoring skills; leadership language, theory and style; communication and conflict; social justice and multiculturalism; values and ethics; and social change.

PSYC 319 Environmental Psychology
3 credits
This course will cover the empirical social science research on a variety of topics within environmental psychology. Specific topics include: conservation, population psychology, built environments, human territoriality, personal space, crowding, environmental stressors, environmental symbolism, cognitive processes, sustainability of spaces and communities.
Prereq: PSYC 101.

PSYC 320 Introduction to Social Psychology
3 credits
Theories, concepts, and research on the social bases of behavior and social interaction; topics of personal and social relevance, aggression, prejudice, altruism and helping behavior, interpersonal attraction, behavior in groups, conformity, attitudes, authoritarianism, and obedience to authority.
Prereq: PSYC 101.

PSYC 325 Cognitive Psychology
3 credits
Joint-listed with PSYC 525
Survey and analysis of major topics in field; emphasis on contemporary research and theory; related topics in perception, memory, and information processing and transformation. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 330 Human Sexuality
3 credits
Joint-listed with PSYC 530
Introduction to the fundamentals of human sexuality; emphasis on current trends and research. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101 .

PSYC 345 Group Dynamics
3 credits
Joint-listed with PSYC 545
This course will cover the empirical research regarding group dynamics, including topics of leadership, cohesion, team building, understanding group level data, problem solving, group mood, group creativity, transactive memory, information processing, and other small group processes. Additional projects/assignments required for graduate credit.
Prereq: PSYC 101.

PSYC 347 Survey of Helping Professions
3 credits
Survey of the helping professions involving psychological assistance, including clinical, counseling, school, social work, psychiatric nursing, chaplaincy/ministerial, non-traditional helpers, and peer helpers. Analysis of counseling methods, psychological testing, outcome studies, and professional issues.
Prereq: PSYC 101.

PSYC 360 Positive Psychology
3 credits
The scientific study of human strengths, life fulfillment, and optimal functioning. Topics include well-being, happiness, optimism, resilience, positive relationships, life meaning, gratitude, and positive development across the lifespan.
Prereq: PSYC 101.

PSYC 372 Physiological Psychology
3 credits
Physiological bases of animal and normal human behavior.
Recommended Preparation: BIOL 102/BIOL 102L or higher.
Prereq: PSYC 101.

PSYC 380 Activities-Based Therapies
3 credits
Techniques based on physical and recreational activities, including crafts, individual and team sports, recreational reading and game-playing. The goal of such approached is to assist clients in their return to an adaptive and or comfortable level of functioning. Both physical and psychological functioning are emphasized.
Prereq: PSYC 101 or Permission of Instructor.

PSYC 390 Psychology of Learning
3 credits
Experimental literature of the nature and conditions of classical and operant conditioning, verbal learning, and cognition.
Prereq: PSYC 101.

PSYC 400 (s) Seminar
Credit arranged
Prereq: PSYC 101.

PSYC 403 (s) Workshop
Credit arranged
Prereq: PSYC 101.

PSYC 404 (s) Special Topics
Credit arranged
Prereq: PSYC 101.

PSYC 405 (s) Professional Development
Credit arranged.

PSYC 414 Traumatic Events: Preparation, Intervention, Evaluation
3 credits
Cross-listed with ORGS 414
Traumatic Events (TEs) range from local to large scale human-induced or catastrophic natural disasters (violent crimes, major accidents, weather events, etc.). This course is designed to address integral response elements: (a) preparation (e.g., organizing, planning, training, equipping) (b) intervention (e.g., multi-agency coordination, logistics, triage, first & secondary responses, volunteers, incident command, communication, mitigation, psychological first aid, media, safety, security) (c) evaluation (e.g., after-action reports, lessons learned, hotwash, best practices, research).
Prereq: PSYC 101 or Permission of Instructor.

PSYC 415 History and Systems of Psychology
3 credits
Gen Ed: Senior Experience
History of psychology as a field of scientific inquiry; overview of development of schools of thought, prominent figures, and key theories.
Recommended Preparation: Two upper-division psychology courses.
Prereq: PSYC 101.

PSYC 416 Industrial/Organizational Psychology
3 credits
Joint-listed with PSYC 516
Application of psychological principles to the study of work behavior; includes topics such as personnel selection, performance appraisal, training, work motivation, teams, leadership, and job attitudes. Additional work required for graduate credit.
Prereq: PSYC 101.

PSYC 419 Adult Development and Aging
3 credits
Gen Ed: American Diversity
Analysis of change from early adulthood through death in the areas of social, cognitive, and physical development; examination of theories, concepts, and research in the area of lifespan development; study of the problems of aging, plasticity of functioning, and ingredients of successful aging.
Prereq: PSYC 101.

PSYC 420 Personality and Social Development
3 credits
Personality and social development from birth through adolescence, including such topics as attachment, aggression, impulse control, sex differences, self concept, moral development, and effects of parental childrearing styles.
Prereq: PSYC 101 and PSYC 305, or Permission.

PSYC 421 Cognitive Development
3 credits
Intellectual development of child from birth to maturity, mechanisms of intellectual growth, relationship between language and cognitive development.
Prereq: PSYC 101 and PSYC 305, or Permission.

PSYC 422 Disorders of Childhood and Adolescence
3 credits
Joint-listed with PSYC 522
Overview of psychological disorders that affect children and adolescents; emphasis on how childhood mental illness is defined, diagnosed, and treated within multiple theoretical perspectives. Examines how multiple, interacting events shape both adaptive and maladaptive developmental outcomes. Additional work required for graduate credit.
Prereq: PSYC 101 and PSYC 305; or Permission.

PSYC 425 Psychology of Action
3 credits
The psychology of action is about the mind-body connection: what are the underlying psychological and neurological processes that enable us to translate our intentions into action, and that prevent us from doing things as well as we would like? Action control is a fundamental topic in psychology, neuroscience, and related disciplines, important for rehabilitation, training, design of usable devices, and insight into the functioning of the nervous system as a whole. Topics include perceptual-motor integration, skill acquisition, and planning and generation of simple and complex movements.
Prereq: PSYC 101 and PSYC 218.

PSYC 430 Tests and Measurements
3 credits
Review of the major principles of test development including test construction and methods for determining test validity and reliability, some of the currently used scales, and study of scaling methods such as Thurstone scales, Likert scales, and semantic differentials. Recommended Preparation: STAT 251.
Prereq: PSYC 101.

PSYC 435 Personnel
3 credits
Joint-listed with PSYC 535, Cross-listed with ORGS 435
Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Additional work required for graduate credit.
Prereq: PSYC 101.

PSYC 440 Psychology of Judgement and Decision Making
3 credits
This course is an introduction to the psychological study of judgment and decision-making. By examining both laboratory and real-world research, we will learn how people (both laypersons and experts) actually make decisions and judgments and how various biases and heuristics can influence their judgments and decisions.
Prereq: PSYC 101.

PSYC 441 Human Relations in the Workplace
3 credits
Joint-listed with PSYC 541, Cross-listed with ORGS 441
Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit.
Prereq: PSYC 101.

PSYC 444 Sensation and Perception
3 credits
Fundamental processes and variables in sensory, perceptual, and cognitive experiences of humans.
Prereq: PSYC 101 and PSYC 218.

PSYC 446 Engineering Psychology
3 credits
Application of principles of experimental psychology to analysis of interaction of the human operator with machine systems and work environments; emphasis on psychological aspects of human performance. Cooperative: open to WSU degree-seeking students.
Prereq: PSYC 101; and PSYC 218 or STAT 301 or Permission.

PSYC 448 Psycholinguistics
3 credits
Cross-listed with ENGL 448
Survey of cognitive processes of language comprehension, language/speech production, and language acquisition. Recommended Preparation: ENGL 241 or ANTH 241, PSYC 101.
Prereq: ENGL 102.

PSYC 450 Training and Performance Support
3 credits
Joint-listed with PSYC 550, Cross-listed with ORGS 450
Review of applicable theory and methods for developing organizational training programs and performance support systems; emphasis will be on conducting needs analyses, development of systems and training programs to serve needs, and evaluation of program outcomes. Additional project/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 456 Psychology of Emotion
3 credits
Theories of emotion; biological and social variables influencing the activation of emotion.
Prereq: PSYC 101.

PSYC 470 Introduction to Chemical Addictions
3 credits
Joint-listed with PSYC 570
Understanding how individuals develop an addiction to psychoactive chemicals and how they recover from such an addiction; recognition, assessment, and treatment of various chemical addictions and how to do interventions for addicted individuals and their families; topics include drugs of abuse, symptoms and warning signs of chemical addiction, assessment, codependency, interventions, treatment, and recovery. Additional projects/assignments required for graduate credit.
Prereq: PSYC 101.

PSYC 472 Introduction to the Pharmacology of Psychoactive Drugs
3 credits
Joint-listed with PSYC 572
Overview of neural mechanisms, behavioral responses, and addictive aspects of psychoactive drugs. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 473 Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB
3 credits
Joint-listed with PSYC 573
Overview of HIV/AIDS, TB, and other STDs; preparing counselors to work with clients to prevent these diseases or counsel clients who have acquired these diseases; making counselors examine issues related to human sexuality and biases about sexually related topics. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 474 Record Keeping and Case Management in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 574
Exploration and examination of the sequence of events and services that clients encounter as they begin and move through the treatment process in a typical addictions treatment setting, as outlined in the Twelve Core Functions and Global Criteria of the International Certification Reciprocity Consortium (ICRC); study of the Twelve Core Functions and the Addiction Counseling Competencies relevant to each area. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 475 Professional Ethics in Addictions Counseling
3 credits
Joint-listed with PSYC 581
Overview of ethical issues and decision making related to addictions counseling; ethics related to harm reduction models and other issues. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 476 Relapse Prevention in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 576
Overview of addictions relapse, issues and triggers related to relapse, prevention of relapse, and issues related to addictions relapse in general. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 477 Chemical Dependency and the Family
3 credits
Joint-listed with PSYC 577
Overview of how chemical dependence impacts the family unit; intervention techniques to assist the family. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 478 Individual Therapy Techniques in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 578
Techniques related to counseling individual chemical addictions clients; helping skills such as active listening, problem solving, paraphrasing; numerous role plays and other practicum exercises. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 479 Group Therapy Techniques in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 579
Theoretical and practical understanding of the group therapy process with individuals from chemical addictions counseling; information about group therapy with actual experience of being part of a group. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 482 Addictions Screening and Assessment
3 credits
Joint-listed with PSYC 582
This course is designed to provide a comprehensive overview of substance abuse screening and assessment. This includes information related to interviewing techniques, substance abuse diagnosis, testing instruments, and issues or problems that influence the assessment environment. Additional projects/assignments reqd for grad cr.
Prereq for 482: PSYC 101 and PSYC 478.
Prereq for 582: PSYC 578.

PSYC 490 Psychopharmacology
3 credits
Joint-listed with PSYC 590
This course provides a solid overview of neurobiology, neurophysiology, and pharmacologic treatment for individuals having psychological/psychiatric disorders. It will also examine evidence supporting the use of such interventions. Additional projects/assignments reqd for grad cr. Recommended Preparation: PSYC 311 and PSYC 372.
Prereq: PSYC 101.

PSYC 494 (s) Psychology Research Training
Credit arranged
Supervised experience in conducting psychological research. Available topics vary depending on current faculty research interests. Recommended preparation: PSYC 218.
Prereq: PSYC 101 and Permission.

PSYC 496 Applied Behavior Analysis
3 credits
Analysis and assessment of behavior in real-life settings, e.g., home, business, industry, and institutions such as prisons and psychiatric hospitals; structured programs of intervention and assessment of behavior change; special emphasis on self-management of behavior.
Prereq: PSYC 101, PSYC 218, and PSYC 390.

PSYC 497 (s) Practicum in Instruction
1-3 credits, max 6
Tutoring and/or instructional services performed by advanced students under faculty supervision.
Prereq: PSYC 101 and Permission.

PSYC 498 (s) Internship
1-6 credits, max arranged
Directed internship in an approved setting that features psychological applications.
Prereq: PSYC 101 and Permission.

PSYC 499 (s) Directed Study
Credit arranged
Prereq: PSYC 101.

PSYC 500 Master's Research and Thesis
Credit arranged.

PSYC 501 (s) Seminar
Credit arranged.

PSYC 502 (s) Directed Study
Credit arranged.

PSYC 503 (s) Workshop
Credit arranged.

PSYC 504 (s) Special Topics
Credit arranged.

PSYC 509 Human Factors in Engineering Design
3 credits
Application of psychological principles to engineering and design; psychological models and principles from areas of perception, cognition, and information processing; the design process; display and control design; work station layout and system integration; environmental factors; safety; mental workload; human-computer interaction; and current research topics. Recommended preparation: PSYC 325 or PSYC 535; PSYC 444; and PSYC 446. Cooperative: open to WSU degree-seeking students.

PSYC 512 Research Methods
3 credits
Philosophy of research, types of design, data analysis, research report.
Prereq: PSYC 218 or equiv, or Permission.

PSYC 513 Advanced Research Methods
3 credits
Types of research designs and data analyses; application of principles of design and analysis to real-world problems; and use of computer packages for data analysis.
Prereq: Permission.

PSYC 516 Industrial/Organizational Psychology
3 credits
Joint-listed with PSYC 416
Application of psychological principles to the study of work behavior; includes topics such as personnel selection, performance appraisal, training, work motivation, teams, leadership, and job attitudes. Additional work required for graduate credit.
Prereq: PSYC 101.

PSYC 522 Disorders of Childhood and Adolescence
3 credits
Joint-listed with PSYC 422
Overview of psychological disorders that affect children and adolescents; emphasis on how childhood mental illness is defined, diagnosed, and treated within multiple theoretical perspectives. Examines how multiple, interacting events shape both adaptive and maladaptive developmental outcomes. Additional work required for graduate credit.
Prereq: PSYC 101 and PSYC 305; or Permission.

PSYC 525 Cognitive Psychology
3 credits
Joint-listed with PSYC 325
Survey and analysis of major topics in field; emphasis on contemporary research and theory; related topics in perception, memory, and information processing and transformation. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 526 Cognitive Neuroscience
3 credits
Examine research in human and animal cognition and its neurological basis. Material covered will include the study of normal cognitive processes in humans with noninvasive behavioral and physiological techniques (e.g., reaction times, fMRI, EEG), the study of brain-injured patients, behavioral and neurophysiological research in animals, and the comparative analyses of cognitive processes across organisms. Computational approaches towards cognitive and neural processing will also be addressed. A selection of the following topics will be covered: perception, object recognition, attention, memory, spatial cognition, motor control, language, executive control, and development. Recommended Preparation: PSYC 325.

PSYC 530 Human Sexuality
3 credits
Joint-listed with PSYC 330
Introduction to the fundamentals of human sexuality; emphasis on current trends and research. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101 .

PSYC 535 Personnel
3 credits
Joint-listed with PSYC 435, Cross-listed with ORGS 535
Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: PSYC 101.

PSYC 541 Human Relations in the Workplace
3 credits
Joint-listed with PSYC 441, Cross-listed with ORGS 541
Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: PSYC 101.

PSYC 545 Group Dynamics
3 credits
Joint-listed with PSYC 345
This course will cover the empirical research regarding group dynamics, including topics of leadership, cohesion, team building, understanding group level data, problem solving, group mood, group creativity, transactive memory, information processing, and other small group processes. Additional projects/assignments required for graduate credit.
Prereq: PSYC 101.

PSYC 550 Training and Performance Support
3 credits
Joint-listed with PSYC 450, Cross-listed with ORGS 550
Review of applicable theory and methods for developing organizational training programs and performance support systems; emphasis will be on conducting needs analyses, development of systems and training programs to serve needs, and evaluation of program outcomes. Additional project/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 552 Ergonomics and Biomechanics
3 credits
Principles of anthropometry, biomechanics, and work physiology applied to workplace. Cooperative: open to WSU degree-seeking students.

PSYC 561 Human-Computer Interaction
3 credits
Overview of human-computer interaction (HCI) topics, including user models, dialog, display design, usability, software development, groupware, and multimedia. Recommended Preparation: PSYC 446. Cooperative: Open to WSU degree-seeking students.

PSYC 562 Advanced Human Factors
3 credits
Review of topics and theories germane to human factors such as performance measurement systems, design specifications, research issues, controls and displays, human reliability, and illumination. Cooperative: open to WSU degree-seeking students.
Prereq:PSYC 446, and STAT 431; or Permission.

PSYC 570 Introduction to Chemical Addictions
3 credits
Joint-listed with PSYC 470
Understanding how individuals develop an addiction to psychoactive chemicals and how they recover from such an addiction; recognition, assessment, and treatment of various chemical addictions and how to do interventions for addicted individuals and their families; topics include drugs of abuse, symptoms and warning signs of chemical addiction, assessment, codependency, interventions, treatment, and recovery. Additional projects/assignments required for graduate credit.
Prereq: PSYC 101.

PSYC 572 Introduction to the Pharmacology of Psychoactive Drugs
3 credits
Joint-listed with PSYC 472
Overview of neural mechanisms, behavioral responses, and addictive aspects of psychoactive drugs. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 573 Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB
3 credits
Joint-listed with PSYC 473
Overview of HIV/AIDS, TB, and other STDs; preparing counselors to work with clients to prevent these diseases or counsel clients who have acquired these diseases; making counselors examine issues related to human sexuality and biases about sexually related topics. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 574 Record Keeping and Case Management in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 474
Exploration and examination of the sequence of events and services that clients encounter as they begin and move through the treatment process in a typical addictions treatment setting, as outlined in the Twelve Core Functions and Global Criteria of the International Certification Reciprocity Consortium (ICRC); study of the Twelve Core Functions and the Addiction Counseling Competencies relevant to each area. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 576 Relapse Prevention in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 476
Overview of addictions relapse, issues and triggers related to relapse, prevention of relapse, and issues related to addictions relapse in general. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 577 Chemical Dependency and the Family
3 credits
Joint-listed with PSYC 477
Overview of how chemical dependence impacts the family unit; intervention techniques to assist the family. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 578 Individual Therapy Techniques in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 478
Techniques related to counseling individual chemical addictions clients; helping skills such as active listening, problem solving, paraphrasing; numerous role plays and other practicum exercises. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 579 Group Therapy Techniques in Chemical Addictions Counseling
3 credits
Joint-listed with PSYC 479
Theoretical and practical understanding of the group therapy process with individuals from chemical addictions counseling; information about group therapy with actual experience of being part of a group. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 581 Professional Ethics in Addictions Counseling
3 credits
Joint-listed with PSYC 475
Overview of ethical issues and decision making related to addictions counseling; ethics related to harm reduction models and other issues. Additional projects/assignments reqd for grad cr.
Prereq: PSYC 101.

PSYC 582 Addictions Screening and Assessment
3 credits
Joint-listed with PSYC 482
This course is designed to provide a comprehensive overview of substance abuse screening and assessment. This includes information related to interviewing techniques, substance abuse diagnosis, testing instruments, and issues or problems that influence the assessment environment. Additional projects/assignments reqd for grad cr.
Prereq for 482: PSYC 101 and PSYC 478.
Prereq for 582: PSYC 578.

PSYC 590 Psychopharmacology
3 credits
Joint-listed with PSYC 490. Cross-listed with RCHS 529.
This course provides a solid overview of neurobiology, neurophysiology, and pharmacologic treatment for individuals having psychological/psychiatric disorders. It will also examine evidence supporting the use of such interventions. Additional projects/assignments reqd for grad cr. Recommended Preparation: PSYC 311 and PSYC 372.
Prereq: PSYC 101.

PSYC 596 Comprehensive Exam
1 credit
Capstone integration and comprehensive examination of material in psychology master's degree program.

PSYC 597 (s) Practicum
Credit arranged
Prereq: permission.

PSYC 598 (s) Internship
Credit arranged.

PSYC 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

PSYC 600 Doctoral Research and Dissertation
Credit arranged.

RANGELAND ECOLOGY & MGMT (REM)

REM 144 Wildland Fire Management
3 credits
Introduction to wildland fire management including fire behavior, fuels, fire prevention and suppression, fire policy and fire ecology. Includes discussion of current fire management issues.

REM 151 Rangeland Principles
3 credits
Rangelands are vast landscapes that cover most of western North America and the earth. Students will examine the ecological principles that cause these grasslands, shrublands, woodlands and deserts to change or stay the same. How humans use and manage these ecosystems will also be explored. The modern challenges of rangeland management must be met with broad thinking and new, sustainable practices to maintain and restore rangelands and the human communities that rely on them. Course requires in-class projects and field experience(s).

REM 152 Rangeland Ecosystem Exploration
1 credit
Students will explore the climates, plants, animals, and human communities of rangeland throughout North America and the globe. The grasslands, shrublands, woodlands, and deserts that are collectively called rangelands include extensive challenges and opportunities for management and conservation. Students will individually explore these ecosystems through photos, ecosystem descriptions, videos, and internet-based tools. In discussions and presentations, students will collectively share their findings about these incredible rangeland ecosystems. (Fall only)

REM 200 (s) Seminar
Credit arranged .

REM 203 (s) Workshop
Credit arranged .

REM 204 (s) Special Topics
Credit arranged .

REM 221 Principles of Ecology
3 credits
Cross-listed with FOR 221 and WLF 220.
Principles of ecology and their relevance to management of natural resources. Major topics include plant and wildlife population, community, ecosystem, and landscape level processes and how these processes interact with the environment. Exploration of how ecosystems are affected by humans and global change. Introduction to the types of questions asked by ecologists, the principal concepts and theories that guide ecological inquiry, and the methods that are used to answer ecological questions. Both terrestrial and aquatic systems are considered.
Prereq: BIOL 102/BIOL 102L or BIOL 114 or BIOL 115 or PLSC 205; or Permission.

REM 252 Wildland Plant Identification
3 credits
Develop skills to identify and classify major rangeland plants. Focus is on identification of grasses, forbs, and shrubs. Discussions will also encompass the ecological roles of wildland plants and the ecosystem classification. This course includes a 1-day field trip. Required for REM majors. (Spring only)

REM 253 Wildland Plant Identification Field Studies
1 credit
Develop skills to identify rangeland plants in the field. Focus is on identification of grasses, forbs, and shrubs. Exploration will include ecosystem roles of wildland plants and developing ecological site descriptions. This course includes a 6-day field trip at the beginning of the summer semester. Required for REM majors.
Prereq: REM 252.

REM 280 Introduction to Wildland Restoration
2 credits
History and overview of the ecological, social, and economic aspects of wildland restoration using case studies. Students will explore approaches and philosophies towards restoring and rehabilitating wildlands that have been damaged through natural forces and human activities such as wildfire, overgrazing, cultivation, and weed invasion.

REM 299 (s) Directed Study
Credit arranged.

REM 340 Ethnobotany
2 credits
Course covers the relationships between humans and plants and the ecology of important native wildland plants of western North America. Course focus is on the natural ecology, identification and cultural attributes (historical and present) of 50 to 75 important native wildland plant species found in forestland, rangeland and other wildland settings in the Northwest U.S. Recommended preparation: plant identification course. (Spring only)

REM 341 Systematic Botany
3 credits
Phylogenetic approach to understanding plant systematics and evolution with a primary focus on the flora of the Pacific Northwest. Includes identification of important plant families and the use of dichotomous keys for species identification. (Spring only)
Prereq: BIOL 114 or BIOL 115; and BIOL 213 or PLSC 205.

REM 398 Renewable Natural Resources Internship
Credit arranged
Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F.
Prereq: Permission of department.

REM 400 (s) Seminar
Credit arranged.

REM 403 (s) Workshop
Credit arranged.

REM 404 (s) Special Topics
Credit arranged.

REM 405 (s) Professional Development
Credit arranged.

REM 407 GIS Application in Fire Ecology and Management
2 credits
Joint-listed with REM 510
Introduces applications of GIS in fire ecology, research, and management including incident mapping, fire progression mapping, GIS overlay analysis, remote sensing fire severity assessments, fire atlas analysis and the role of GIS in the Fire Regime Condition Class concept and the National Fire Plan. Additional assignment/projects required for graduate credit. (Spring only)
Prereq: FOR 375 or GEOG 385; or Permission.

REM 410 Principles of Vegetation Monitoring and Measurement
2 credits
This course introduces theory and application of quantitative and qualitative methods for measuring and monitoring vegetation in grasslands, shrublands, woodlands, and forests. Students will gain a solid understanding of how to measure and evaluate vegetation attributes and design and implement monitoring programs relative to wildlife habitat, livestock forage, fire fuel characteristics, watershed function, and many other wildland values. Class field trip required. Recommended Preparation: A basic understanding of how to use computer spreadsheets such as Excel. Students are encouraged to also enroll in REM 411 which builds on the principles of REM 410 for wildland habitat assessment. (Fall only)
Prereq: STAT 251 or permission.

REM 411 Wildland Habitat Ecology and Assessment
2 credits
Cross-listed with WLF 411.
This course integrates field sampling with quantitative and theoretical concepts related to scientific research, wildlife habitat, and land management practices. Students collect, analyze, and report on ecological data in various formats, and learn specific protocols used by professionals to assess wildlife habitat. Class field trips required. Recommended preparation: REM 252 and REM 253, REM 341, or other plant identification class; ability to use excel. Co-enrollment in REM 410 is recommended.
Prereq: STAT 251 or Permission.

REM 429 Landscape Ecology
3 credits
Cross-listed with FOR 429
Ecological relationships and conservation issues for biotic communities across the landscape, including spatial and temporal dynamics and patterns, and importance of landscapes in maintenance of ecosystem diversity and function. One or more field trips; one 2-3 hour lab period per week. Recommended Preparation: Familiarity with spreadsheet programs and problem solving using computers. (Spring only)
Prereq: FOR 221 or REM 221.

REM 440 Restoration Ecology
3 credits
Cross-listed with NRS 440
The ecological restoration of disturbed ecosystems. Fundamental principles from ecology, ecophysiology, and community ecology are used in a systems ecology approach to examine how the structure and function of damaged ecosystems can be restored -- with the goal of establishing a stable and self-sustaining ecosystem.
Prereq: NR 321, FOR 221, REM 221, WLF 220, BIOL 314, or permission.

REM 452 Western Wildland Landscapes
2 credits
Survey of wildland plant communities of western North America, focusing on their natural history, including the effects of use by human beings, based on their physical, climatic, and biological characteristics. (Spring only)
Prereq: FOR 221 or REM 221; or Permission.

REM 456 Integrated Rangeland Management
3 credits
Gen Ed: Senior Experience
Management strategies for integrating grazing with other natural resource values such as wildlife, water, timber, recreation, and aesthetics; emphasis on herbivore ecology including ecological impacts of grazing, ways to manage grazing, and nutritional relationships between plants and free-ranging ungulates on rangeland, pastureland, and forest ecosystems. One 4 to 5 day field trip. Recommended Preparation: REM 151. (Spring only)
Prereq: ENGL 313 or ENGL 317.

REM 459 Rangeland Ecology
2 credits
Application of ecological principles in rangeland management; stressing response and behavior of range ecosystems to various kinds and intensity of disturbance and management practice. Recommended Preparation: courses in general ecology (e.g., REM 221), technical writing (e.g., ENGL 317), and vegetation assessment (e.g., REM 410 or FOR 274) or Permission. (Fall only)

REM 460 Integrating GIS and Field Studies in Rangelands
1 credit
Topics related to changing knowledge and technology related to GIS and spatial analysis relevant to ecology of grasslands, shrublands and woodlands. Min. six integrated GIS labs; one five-day field trip. Required for REM majors. (Fall only)
Coreq: REM 459.

REM 473 ECB Senior Presentation
1 credit
Gen Ed: Senior Experience
Cross-listed with FISH 473, FOR 473, NRS 473, RMAT 473, and WLF 473
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with REM 485 or REM 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).
Prereq: Instructor Permission.

REM 480 Ecological Restoration
3 credits
Joint-listed with REM 580
Planning and implementing restoration projects in conjunction with land agencies and stakeholders. Includes service-learning projects. Field trip(s) required. Additional literature review, reports, discussion and/or a class project are required for students pursuing this as a 500-level course.
Prereq: REM 440 or Permission.

REM 495 Teaching Practicum
1-3 credits, max arranged
Gen Ed: Senior Experience
Joint-listed with REM 595
Provides students with peer teaching experience and assisting an instructor. May include classroom activities, grading assignments, developing materials, and/or participating in field trips. Students who take this course as the graduate level, as REM 595, will be asked to do additional work related to developing a teaching philosophy, developing assessment, or experimenting with specific pedagogical approaches with the faculty supervisor.
Prereq: Permission.

REM 497 Senior Research and Thesis
Credit arranged
A research investigation, selected and designed jointly by the student and professor, during which the student has the opportunity to learn research techniques of experimental design, proposal writing, data collection and analysis, scientific writing, and publication; at completion, the student will produce a publishable journal manuscript and/or a conference presentation.
Prereq: Senior standing and Permission.

REM 498 (s) Internship
Credit arranged
Supervised field experience where students define specific topics and skills in rangeland management they wish to gain, develop a learning plan, and present a final report of knowledge gained or project outcomes. The internships will be overseen by an on-site field supervisor and a faculty mentor. Instructor permission required.

REM 499 (s) Directed Study
Credit arranged
For the individual student; conferences, library, field, or lab work.
Prereq: Senior standing, GPA 2.5, and Permission.

REM 500 Master's Research and Thesis
Credit arranged.

REM 501 (s) Seminar
Credit arranged
Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.
Prereq: Permission.

REM 502 (s) Directed Study
Credit arranged.

REM 503 (s) Workshop
Credit arranged
Selected topics in the conservation and management of natural resources.
Prereq: Permission.

REM 504 (s) Special Topics
Credit arranged.

REM 505 (s) Professional Development
Credit arranged.

REM 507 Landscape and Habitat Dynamics
3 credits
Students explore landscape change occurring a variety of spatial and temporal scales, including global change, succession, disturbance events, and change induced by humans. Via scientific readings, models and spatial analysis students will learn how to quantify landscape change and how a change in environmental conditions and disturbance regimes may affect the composition of landscapes, specifically plant and animal habitats. Recommended Preparation: courses in ecology, statistics, and GIS. (Spring, alt/yrs)
Prereq: Permission.

REM 510 GIS Application in Fire Ecology and Management
2 credits
Joint-listed with REM 407
Introduces applications of GIS in fire ecology, research, and management including incident mapping, fire progression mapping, GIS overlay analysis, remote sensing fire severity assessments, fire atlas analysis and the role of GIS in the Fire Regime Condition Class concept and the National Fire Plan. Additional assignment/projects required for graduate credit. (Spring only)
Prereq: FOR 375 or GEOG 385; or Permission.

REM 529 World Savannas
3 credits
This course provides a broad overview of world savannas including their characteristics and the ecosystem goods and services they provide. The course focuses on the ecological and biogeochemical characteristics of savannas, how humans use these ecosystems, current problems, and strategies land management are applying to solve them.

REM 556 Foraging Ecology of Herbivores
2 credits
Synthesis of foraging behavior concepts including nutritive quality of forages, digestive and metabolic constraints, and diet and habitat selection. Cooperative: open to WSU degree-seeking students. (Fall, alt odd/yrs)

REM 560 Ecophysiology
3 credits
Functional responses and adaptations of individual species to their environment, emphasizing the physiological mechanisms that influence the interactions between organisms and the major environmental factors (e.g., solar radiation, energy balance, temperature, water and nutrients, climate), and how this affects the interactions among species and their growth and survival (e.g., competition, herbivory, and allelopathy).The interactive learning materials are compatible only with computers that are 100% compatible with the Windows operating system and the browser, Internet Explorer. (Fall only)
Prereq: A course in general ecology (i.e. REM 221) and general botany, or Permission [www.EcologyOnline.net].

REM 570 Presentation Skills for Scientists
2 credits
A practical course to master the skills required for oral presentations for research, teaching, and outreach. A detailed examination of all elements that must be integrated and mastered for an effective and engaging oral presentation.

REM 580 Ecological Restoration
3 credits
Joint-listed with REM 480
Planning and implementing restoration projects in conjunction with land agencies and stakeholders. Includes service-learning projects. Field trip(s) required. Additional literature review, reports, discussion and/or a class project are required for students pursuing this as a 500-level course.
Prereq: REM 440 or Permission.

REM 595 Teaching Practicum
1-3 credits, max arranged
Joint-listed with REM 495
Provides students with peer teaching experience and assisting an instructor. May include classroom activities, grading assignments, developing materials, and/or participating in field trips. Students who take this course as the graduate level, as REM 595, will be asked to do additional work related to developing a teaching philosophy, developing assessment, or experimenting with specific pedagogical approaches with the faculty supervisor.
Prereq: Permission.

REM 597 (s) Practicum
Credit arranged.

REM 598 (s) Internship
Credit arranged.

REM 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

REM 600 Doctoral Research and Dissertation
Credit arranged
Prereq: Admission to the doctoral program in "natural resources" and Permission of department.

RECREATION, SPORT, AND TOURISM MANAGEMENT (RSTM)

RSTM 104 Introduction to Recreation, Sport, and Tourism Professions
3 credits
Introduction to the foundations of recreation, sport and tourism professions and careers, and related issues, resources, and professional opportunities. (Fall only)

RSTM 105 Teaching Golf I
2 credits
Teach Professional Golf Management students the basics of golf instruction. They will learn how to establish relationships, organize groups, design golf development programs, demonstrate the short game, as well as the full swing. (Spring only)
Prereq: PGA student or permission.

RSTM 107 Outdoor Recreation and Adventure Sports
3 credits
Introduction to leadership and motivational theories, core competencies, trends, and programming for contemporary outdoor recreation and adventure sports. Overnight field trips and weekly labs required.

RSTM 108 Orienteering & Navigation
1 credit
This course will provide an introduction to orienteering and basic map and compass navigation skills for working or recreating. The reading and understanding of forest service and topographical maps will be covered with a focus on symbols, legends, border information and contour lines. Magnetic compasses and an introduction to GPS technology will be used to teach course plotting on maps. Orienteering field experience will be integrated throughout the course. Instruction requires practical field application for hands-on experience.

RSTM 200 (s) Seminar
Credit arranged. .

RSTM 203 (s) Workshop

RSTM 204 (s) Special Topics
Credit arranged..

RSTM 205 Teaching Golf II
2 credits
Basic fundamentals of how the golf swing works. Students will learn how to analyze swing motion and observe ball flight characteristics to help the student improve their golf game. Students will also examine ways to generate business using marketing and promotional techniques. (Fall only)
Prereq: PGA student or PGA 103 and Permission.

RSTM 216 River Recreation and Water Craft Safety
3 credits
Introduction to water crafts (river board, rafts, canoes, inflatables, etc) and teaching basic paddling skills and aspects of safety. Additional content includes: river policy, history, culture, careers/guiding, equipment maintenance/storage, river camping and leadership. Field days required (3-5 days).
Prereq or Coreq: RSTM 107.

RSTM 218 Rock Climbing & Mountaineering
3 credits
This course will teach: intra to fundamentals of basic rock climbing including equipment, climbing techniques, knots, belaying, and rappelling; emphasis on skill development, risk management, and leadership. Intra to fundamentals of mountaineering including equipment; fundamentals; rock, snow, and ice techniques; climbing equipment; navigation; expedition planning and safety; emphasis on skill development and safety. This course will follow and promote industry safety standards and teach best practices. Instruction requires three to five full days of practical field application for hands-on experience.
Prereq: RSTM 107.

RSTM 222 Cross Country Skiing
1 credit
Intro to skills of cross country skiing including equipment, waxing, climbing techniques, turns, downhill, and diagonal glides. One 1-day field trip. Recommended Preparation: Two courses from NRS 125, NRS 387, NRS 487, NRS 490. (Alt/yrs)

RSTM 224 Whitewater Rafting
1 credit
Intro to skills of whitewater rafting including equipment, trip planning, permits, techniques, and river impact. One or two field trips. (Alt/yrs)
Prereq: Two courses from NRS 125, NRS 387, NRS 487, NRS 490, or Permission.

RSTM 225 Kayaking
1 credit
Intro to skills of whitewater kayaking including equipment, eskimo rolls, eddy turns, ferrying, and rapid maneuvering. One 2-day field trip. (Alt/yrs)
Prereq: Two courses from NRS 125, NRS 387, NRS 487, NRS 490, or Permission.

RSTM 227 Mountain Biking
1 credit
Introduction to fundamentals of mountain biking including equipment, trip planning, skill development, off-road riding, bike repair, and safety. One 3 to 7 day field trip required.

RSTM 228 Avalanche Fundamentals
2 credits
This course will teach the skills necessary for understanding the complex systems involved in backcountry winter avalanche conditions. This course will follow and promote industry safety standards and teach best practices based off of the guidelines set by the American Avalanche Association. This two credit course will cover curriculum such as: general information about avalanche hazard, a framework for decision making and risk management while traveling in avalanche terrain, effective field observation techniques, companion rescue and proper equipment for traveling in avalanche terrain. Instruction requires two full days of practical field application for hands-on experience.
Prereq: RSTM 107 or Equivalent Experience with Instructor Permission.

RSTM 229 Swiftwater Rescue Training
2 credits
This course will teach: identifying river hazards, rescue philosophy / liability, self rescue, tethered swimmers / contact rescues, throwbag deployment, boat based / shore based rescues, strainer swimming, shallow water crossings, foot and body entrapment, knots, boat pins, mechanical advantage and technical rope systems, quick, smooth, effective rescue technique. Instruction requires three full days of practical field application for hands-on experience.
Prereq: RSTM 107 and RSTM 216; or equivalent experience with instructor permission.

RSTM 231 Alpine Skiing
1 credit
Introduction to skills of alpine skiing including ski instruction and tactics in various terrain, equipment selection, and waxing. One 2-day field trip.

RSTM 240 Recreation and Sport Activities, Programming, and Marketing
3 credits
Introduction to recreation activities with applications to programming and marketing in leisure settings. Programming field experience required.

RSTM 254 Camp Leadership in Recreation and Sport
3 credits
Objectives, organizational structures, programs, and philosophies of for-profit and non-profit recreation and sport camps. One 3-4 day field trip. (Alt/yrs)

RSTM 260 Foundations of Recreation
3 credits
History of and expanding role of leisure in modern U.S. life; emphasis on factors influencing leisure; analysis of leisure values as related to the individual and society. (Fall only)

RSTM 280 Practicum in Recreation, Sport, and Tourism
1 credit, max 3
Practical experience in agency recreation and leisure services recreation, park, sport, or tourism agency services. Forty clock hours required per credit. Graded P/F.
Prereq: Permission of advisor.

RSTM 290 Wilderness First Responder
3 credits
Wilderness First Responder is the accepted standard in wilderness medical training for guides, trip leaders, and outdoor professionals. This course covers the knowledge and skills needed to respond to back country medical and trauma situations. Over night field trip required. (Spring only)

RSTM 299 (s) Directed Study
Credit arranged. .

RSTM 305 Teaching Golf III
2 credits
This course will build on the concepts contained in the Analysis of Swing and the preseminar material for Philosophy and Swing Concepts. This course will examine swing philosophy; apply concepts to various situations; understand course management, physical fitness, and special populations; evaluate short game skills; identify and demonstrate different drills; and incorporate video technology.
Prereq: RSTM 205.

RSTM 310 Outdoor and Adventure Leadership
3 credits
Outdoor and adventure leadership for wilderness experiences and effective expedition planning. Fundamentals of handling wilderness emergencies and evacuation. Wilderness backpacking field experience required during course.
Prereq: RSTM 107.

RSTM 370 Health and Human Development in Recreation, Sport, and Tourism
3 credits
Recreation, sport, and tourism across the lifespan (early childhood to late life). Health and human development concepts and theories. (Spring, Alt/yrs even)

RSTM 380 Principles of Travel and Tourism
3 credits
Tourism is "the largest scale movement of goods, services, and people that humanity has ever seen." This course provides an overview of tourism as an industry and a sociocultural phenomenon from local to international levels as well as the economic, social, and environmental impacts of tourism on local communities.

RSTM 395 Diversity in Recreation, Sport and Tourism
3 credits
Delivery of recreation, sport, and tourism services to diverse populations. Analysis of diversity issues in a wide array of leisure settings.

RSTM 400 (s) Seminar
Credit arranged..

RSTM 403 (s) Workshop
Credit arranged..

RSTM 404 (s) Special Topics
Credit arranged..

RSTM 405 (s) Professional Development
Credit arranged.
Joint-listed with REC 505
Credit earned may not be applied toward graduate degree program. Professional development and enrichment of recreational professionals. Additional projects/assignments required for graduate credit.

RSTM 408 Experiential Education and Adventure Recreation
3 credits
Philosophical and theoretical foundations of experiential education and adventure activities, and applications to individual, group, and organizational development. Field trips required. (Alt/yrs)

RSTM 411 Expedition Planning and Management
3 credits
This course will explore the process of expedition planning including skill, resource and risk assessments, and experience design and activity management to meet desired outcomes. Students will carry out a 7-10 day expedition of their own to test their plan.
Prereq or Coreq: RSTM 107.

RSTM 415 Turfgrass Management
3 credits
Turfgrass science, cultivation and management for a wide variety of golf course applications.

RSTM 424 Inclusive Physical Education and Recreation
3 credits
Cross-listed with PEP 424
To provide an overview of movement and physical activities in physical education and recreational settings for individuals with disabilities. Emphasis will be on history, etiology, characteristics, services, resources, professional competencies, and instructional strategies. Practical experience (16 hrs in the community) is required to enhance instructional abilities to adapt and create an inclusive physical education and recreational setting for all participants.
Prereq: Senior standing or Permission.

RSTM 455 Design & Analysis of Research in Movement Sciences
3 credits
Cross-listed with H&S 455 and PEP 455
This course is designed to survey the basic types of research methods often found in exercise science and health; and recreation. A variety of research designs and computerized statistical analyses are studied to help students understand the systematic nature of problem solving. Various research problems as they relate to exercise science and health; and recreation are discussed for the purpose of identifying the broad and diverse nature of research in the movement, leisure, and health professions. (Spring only)
Prereq: Junior or Senior standing.

RSTM 485 Trends in Recreation, Sport and Tourism
3 credits
Current trends and issues in the recreation, sport, and tourism field; analysis of selected topics of current relevance. (Alt/yrs)

RSTM 490 Management and Entrepreneurship in Recreation, Sport, and Tourism
3 credits
Models of entrepreneurism and components of successful management in recreation, sport, park, and tomism settings such as business planning, human resources, operations and risk management. (Alt/yrs)

RSTM 498 (s) Internship in Recreation, Sport, and Tourism
Credit arranged
Gen Ed: Senior Experience
Supervised field work with a professional, sport, or tourism recreation agency.
Prereq: RSTM 280, senior status, majority of coursework completed.

RSTM 499 (s) Directed Study
Credit arranged..

RSTM 500 (s) Master's Research and Thesis
Credit arranged..

RSTM 502 (s) Directed Study
Credit arranged..

RSTM 503 (s) Workshop
Credit arranged..

RSTM 504 (s) Special Topics
Credit arranged..

RSTM 505 (s) Professional Development
Credit arranged
Joint-listed with RSTM 405
Credit earned may not be applied toward graduate degree program. Professional development and enrichment of recreational professionals. Additional projects/assignments required for graduate credit.

RSTM 575 (s) Leadership, Programming and Marketing
3 credits
Studies of theories, methods, and styles of effective leadership. Includes group dynamics, motivation, team building and leadership skills. Planning and development of activity programs and implementation of marketing techniques. (Fall only)

RSTM 585 Policy Analysis and Historical Perspectives of Leisure
3 credits
Examination of the policy issues that affect the physical education and recreation fields; study of the historical significance of key events and individual contributions from cultural, social and economic points of view. (Fall or Summer only)

RSTM 595 Budgeting, Financing and Managing Recreational Facilities
3 credits
Policies and practices involved in budgeting, financing, acquisition, managing recreation agencies and facilities. (Spring only)

RSTM 596 Rec and Sport Mgmt Behavior
3 credits
Management behavior and strategies related to recreation and sport agencies, including leadership, supervision, and a variety of administrative issues. (Spring only)

RSTM 598 (s) Internship
Credit arranged
Supervised field experience in an appropriate leisure agency.
Prereq: Permission.

RSTM 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

REHAB COUNSELING & HUMAN SERV (RCHS)

RCHS 405 (s) Professional Development
Credit arranged.
Joint-listed with RCHS 505
Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

RCHS 500 Master's Research and Thesis
Credit arranged.

RCHS 502 (s) Directed Study
Credit arranged.

RCHS 503 (s) Workshop
Credit arranged.

RCHS 504 (s) Special Topics
Credit arranged.

RCHS 505 (s) Professional Development
Credit arranged
Joint-listed with RCHS 405
Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward grad degree programs, but may be used in a fifth-yr program. Additional projects/assignments reqd for grad cr.

RCHS 506 Human Growth & Development
3 credits
Human development theories and needs across a lifespan, personality development and their implications for rehabilitation and counseling of people with disabilities.

RCHS 510 Assessment in Rehab
3 credits
Theoretical background and practical skills needed to administer, score, and interpret individual assessment procedures in counseling and human services. Broad exposure to techniques and instruments of psychological and educational assessment is provided.
Prereq: Permission.

RCHS 512 Theories and Applications of Counseling
3 credits
Overview of prevailing theories of counseling, didactic and experiential activities to model application of technique activities; skill mastery through microskills role-playing.
Prereq: Permission.

RCHS 514 Career Counseling and Development
3 credits
Career development theories, occupational and educational information and systems, career and leisure counseling, life-style and career decision-making, and career development program planning, resources, and evaluation.
Prereq: Permission.

RCHS 517 Group Counseling
2 credits
Group theory and practice in counseling, including appropriate uses of group, member selection, planning and implementing groups, members' roles, rights, and responsibilities, group leader characteristics and skills, curative factors in group, ethical considerations, problems unique to group, client dynamics in group, and stages of group development.
Prereq: RCHS 512 or RCHS 512 and Permission.
Coreq: RCHS 518.

RCHS 518 Group Counseling Lab
1 credit
Participation in a personal development group to promote group counseling skills and awareness of the self as an instrument in effective group leadership; participation as group members as well as observing and serving as part of a reflecting team for the group. Graded P/F. Two hours of lab a week.
Prereq: RCHS 512 and Permission.

RCHS 519 Social and Cultural Foundations
2 credits
Increase student awareness and knowledge of social forces, trends, and changes as they relate to the practice of counseling, assessment, consultation, learning, development, and problem-solving. A particular focus will be the study of cultural pluralism as it relates to cultural mores, social interaction patterns, differing life styles, and the political and economic realities existing in the U.S. today. Through the exploration of contemporary social and cultural issues in the diverse population of the U.S., students will be better able to understand the effects of these issues on their own values and on the practice of their professions as counselors and school psychologists.

RCHS 520 Approaches to Counseling with Families
2 credits
Introduction to the application of general systems theory to families within the context of the larger culture; overview of systems approaches to family treatment, multicultural aspects of family treatment, ethics involved in consultation with families, and referral to appropriate services.
Prereq: RCHS 512, RCHS 517, and RCHS 519.

RCHS 521 Counseling Techniques
3 credits
Overview of the skilled-helper counseling model and the counseling approaches; skill mastery through microskills role-playing activities.

RCHS 528 Diagnosis and Case Conceptualization in Counseling and Human Services
3 credits
Review of adult and child psychopathology with an emphasis on diagnosis and case conceptualization; basic issues in classification and diagnosis; training in differential diagnosis utilizing the DSM-IV diagnostic system.

RCHS 529 Psychopharmacology
3 credits
Cross-listed with PSYC 590
This course provides a solid overview of neurobiology, neurophysiology, and pharmacologic treatment for individuals having psychological/psychiatric disorders. It will also examine evidence supporting the use of such interventions. Additional projects/assignments reqd for grad cr. Recommended Preparation: PSYC 311 and PSYC 372.
Prereq: PSYC 101.

RCHS 530 Legislative and Philosophical Foundations in Working with People with Disabilities
3 credits
Orientation to the history, philosophy, legislation, and delivery of services to people with disabilities across placements.

RCHS 531 Psycho-social Aspects of Disability
3 credits
Social and psychological aspects of disability; attitudinal and environmental problems associated with specific disabilities and their implications for intervention, approaches to rehabilitation across all disabilities, and differences between typical and pathological behavior of people with disabilities.

RCHS 532 Medical/Physical Aspects of Rehabilitation
3 credits
Medical terminology, physical characteristics, and medical information needed to serve people with disabilities; medical and health services used to accommodate and remediate medical and physical disabilities.

RCHS 534 Rehabilitation and Community Case Management
3 credits
Making effective case and case load management decisions including intake interviewing; medical, psychological, and vocational evaluation; job placement and rehabilitation/treatment planning; preparation in writing case histories and notes.

RCHS 535 Vocational Placement and Assistive Technology
3 credits
Environmental and attitudinal barriers to employment experienced by people with disabilities; legislation and current assistive technologies examined as a means of addressing barriers to employment; methods and techniques in employer contact, job analysis, job development, job placement, and transitional planning to overcome those barriers; integrating knowledge about the consumer and labor markets to facilitate an appropriate vocational placement and retention.
Prereq: Permission.

RCHS 536 Professional Issues, Ethics, and Law in Counseling
2 credits
Analytical process of ethical decision-making as it applies to casework, organizational policy, and law; examination of relevant professional and legal issues.

RCHS 540 Addictions Counseling
2 credits
Knowledge and abilities of assessment, treatment, and relapse prevention of addictions; focus on interventions appropriate for people with addiction problems.

RCHS 570 Research and Evaluation in Counseling
3 credits
Overview of measures, instruments, and research methodologies used in the fields of counseling and school psychology. Primary focus is on preparing students to understand the process of scientific enquiry, fundamental statistical concepts, the use of technology, data analysis, qualitative research, and single-subject design. Students will be equipped with an ethical and competent skill set that can be used in the research and evaluation of individual/group treatments, programs, and student outcomes. (Summer only)

RCHS 597 (s) Practicum
Credit arranged
Closely supervised experience as a counselor or school psychologist in a professional setting; 50 hrs of experience are required for each credit. Graded P/F.
Prereq: RCHS 510, RCHS 512, CTE 464, and Permission.

RCHS 598 (s) Internship
Credit arranged
For advanced grad students. Currently offered in counselor education, counselor supervision, college counseling, college student personnel services, school special services, school psychology, school counseling, agency counseling, and private counseling practice. Graded P/F.
Prereq: Permission.

RCHS 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

RCHS 600 (s) Doctoral Research and Dissertation
Credit arranged.

RELIGIOUS STUDIES (RELS)

RELS 133 Religion and Family
2 credits
Overview of influence of religion on dating, courtship, marriage, and family life.

RELS 204 (s) Special Topics
Credit arranged.

RELS 299 (s) Directed Study
Credit arranged.

RELS 302 Biblical Judaism: Texts and Thought
3 credits
Cross-listed with PHIL 302
Analysis of the Hebrew Bible (Old Testament) and related texts with an emphasis on hermeneutics and thought.

RELS 303 Early Christianity: Texts and Thought
3 credits
Cross-listed with PHIL 303
Analysis of the New Testament and other early Christian texts of the first and second centuries C.E. with an emphasis on hermeneutics and thought.

RELS 307 Buddhism
3 credits
Cross-listed with PHIL 307
Philosophy and religion of Gautama Buddha as it developed in India, Tibet, China, and Japan.

RELS 311 Development of Social Theory
3 credits
Cross-listed with SOC 311
Development of social theory from classical roots through contemporary schools; biographical accounts and original works in sociological theory.
Prereq: SOC 101.

RELS 327 Belief Systems
3 credits
Cross-listed with ANTH 327
Method and theory of comparative anthropological study of religion.

RELS 341 Ancient Greece
3 credits
Cross-listed with HIST 341
Surveys Greek history from c. 2500 BCE to the end of the 4th century BCE, paying special attention to military, political, and cultural developments.

RELS 344 The Roman Empire
3 credits
Cross-listed with HIST 344
Surveys Roman history from c. 31 BCE to the 5th century CE, paying particular attention to military, political, religious, and social issues and developments.

RELS 375 The Bible as Literature
3 credits
Gen Ed: Humanities
Cross-listed with ENGL 375
Literary qualities of the Bible.
Prereq: ENGL 102.
Prereq or Coreq: ENGL 175 or ENGL 257 or ENGL 258.

RELS 404 (s) Special Topics
Credit arranged.

RELS 422 Plateau Indians
3 credits
Gen Ed: American Diversity
Cross-listed with AIST 422 and ANTH 422
An overview of historic and contemporary Indian cultures of the Plateau; oral traditions, ceremonial life, social organization, and subsistence activities; history of contact with Euro-American society. Two 1 to 2-day field trips reqd. Additional projects/assignments reqd for grad cr. ANTH 422 is a cooperative course available to WSU degree-seeking students.

RELS 442 The Medieval Church: Europe in the Early and High Middle Ages
3 credits
Gen Ed: Humanities
Cross-listed with RELS 442
Evolution of medieval Christian society from reign of Constantine (c. 300) to pontificate of Innocent III (1215), as expressed in monastic and mendicant orders, crusades, 12th-century Renaissance, and heresy.

RELS 443 The Medieval State: Europe in the High and Late Middle Ages
3 credits
Gen Ed: Humanities
Cross-listed with HIST 443
Analysis of how the vitality of particular medieval princes, of the commercial revolution, and of such movements as development of common law was harnessed in the evolution of medieval government from feudalism to the modern state.

RELS 447 The Renaissance
3 credits
Gen Ed: Humanities
Cross-listed with HIST 447
Explores the transformative movement known as the European Renaissance. Examines how humanism not only shaped and formed art, music, literature and philosophy but also informed one's relationship to the state. Additional projects/assignments required for graduate credit.

RELS 448 The Reformation
3 credits
Gen Ed: Humanities
Cross-listed with RELS 448
This course examines the social and economic as well as the theological dynamic of the Reformation. The course begins by examining the thought of Erasmus and More, continuing through that of Luther, Calvin, and Loyola, to the Anabaptists. Religious upheaval lead not only to the political and military upheaval of the Religious Wars, but also to religious debate, the echoes of which resound through to the present. Additional projects/assignments required for gradate credit.

RELS 499 (s) Directed Study
Credit arranged.

RENEWABLE MATERIALS (RMAT)

RMAT 100 Intro to Renewable Resources
2 credits
Overview of renewable building materials and bio-energy industries. Discovery laboratory in the use of renewable and recycled waste stream materials to create useful products. One lecture and one three-hour lab a week. (Spring only)

RMAT 203 (s) Workshop
Credit arranged.

RMAT 204 (s) Special Topics
Credit arranged.

RMAT 299 (s) Directed Study
Credit arranged.

RMAT 321 Properties of Renewable Materials
3 credits
Physiology, structure and physical and mechanical properties of woody and other renewable plant materials. (Fall only)

RMAT 400 (s) Seminar
Credit arranged.

RMAT 401 Undergraduate Research
1-3 credits
Directed undergraduate research at the upper division level.
Prereq: Junior or senior standing.

RMAT 403 (s) Workshop
Credit arranged.

RMAT 404 (s) Special Topics
Credit Arranged.

RMAT 405 (s) Professional Development
Credit Arranged
Credit earned in this course will not be accepted toward grad degree programs.
Prereq: Permission.

RMAT 436 Biocomposites
3 credits
Joint-listed with RMAT 536
Raw material, processes, properties, and their applications for a number of natural fiber and wood composites made of veneers, particles and fibers. Additional projects and assignments reqd for grad cr. Two half day field trips. Two lectures and one 3-hr lab a week. (Fall only)
Prereq:CHEM 101 and RMAT 321; and CHEM 275 or CHEM 277.

RMAT 438 Introduction to Lignocellulosic Chemistry
1 credit
The chemistry of lignocellulosic fiber (natural fiber and wood) formation and structure. Two lectures a week for the first half of the semester. This course meets concurrently with RMAT 538. (Spring only)
Prereq: CHEM 101 or CHEM 111; and CHEM 275 or CHEM 277.

RMAT 444 Primary Products Manufacturing
3 credits
Raw materials, procurement, production methods, drying product specifications, and grading for primary products made from renewable materials including lumber, plywood, poles, and energy products; plant layout, machines, and systems analysis; plant tours. Two lec and one 5-hr lab a wk. (Spring only)
Prereq: RMAT 321.

RMAT 450 Biomaterials Deterioration and Protection
2 credits
Agents that cause deterioration of biomaterials; green building durability issues and design considerations; preservative systems and alternative control methods; and environmental considerations. Recommended preparation: RMAT 321 (Fall only)

RMAT 473 ECB Senior Presentation
1 credit
Gen Ed: Senior Experience
Cross-listed with FISH 473, FOR 473, NRS 473, REM 473, and WLF 473
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with 485 or 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).
Prereq: Instructor Permission.

RMAT 491 Biomaterial Product and Process Development Lab
2 credits
Lab to accompany RMAT 495. One 3-hr lab per week. (Spring only)
Prereq: ECON 201 or ECON 202, and RMAT 495.

RMAT 495 Product Development and Brand Management
3 credits
Gen Ed: Senior Experience
Cross-listed with MKTG 495
This course examines product development strategy and the management of brands. Topics will include strategic intent of product development, the process of product development (ideation through post product launch evaluation), market and financial feasibility of product development, trends in product development, and managing brands (strategic brand management and managing brand equity).
Prereq: ECON 201 and ECON 202, or ECON 272; and MKTG 321.
Coreq: MKTG 321.

RMAT 498 Renewable Natural Resources Internship
Credit arranged
Supervised field experience with an appropriate public agency or private company. Graded P/F. (Summer only)
Prereq: Permission of advisor.

RMAT 499 (s) Directed Study
Credit arranged
For the individual student; conferences, library, field, or lab work.
Prereq: Senior standing, GPA 2.5, or Permission.

RMAT 500 Master's Research and Thesis
Credit arranged.

RMAT 501 (s) Seminar
Credit arranged
Major philosophy, management, and research problems of forest products industries; presentation of individual studies on assigned topics.
Prereq: Permission.

RMAT 502 (s) Directed Study
Credit arranged.

RMAT 503 (s) Workshop
Credit arranged
Selected topics in the conservation and management of natural resources.
Prereq: Permission.

RMAT 504 (s) Special Topics
Credit arranged.

RMAT 505 (s) Professional Development
Credit arranged
Credit earned in this course will not be accepted toward graduate degree programs.
Prereq: Permission.

RMAT 536 Biocomposites
3 credits
Joint-listed with RMAT 436
Raw material, processes, properties, and their applications for a number of natural fiber and wood composites made of veneers, particles and fibers. Additional projects and assignments reqd for grad cr. Two half day field trips. Two lectures and one 3-hr lab a week. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq:CHEM 101 and RMAT 321; and CHEM 275 or CHEM 277.

RMAT 538 Lignocellulosic Biomass Chemistry
3 credits
The chemistry of lignocellulosic fiber (natural fiber and wood) formation, agricultural/natural fiber and wood structure and reactions of lignocellulosic compounds. Two lec and one 3-hr lab a wk. Cooperative open to WSU degree-seeking students (Spring only).
Prereq: CHEM 101 and RMAT 321; and CHEM 275 or CHEM 277.

RMAT 598 (s) Internship
Credit arranged.

RMAT 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

RMAT 600 Doctoral Research and Dissertation
Credit arranged
Prereq: Admission to the doctoral program in "natural resources" and Permission of department.

SOCIOLOGY (SOC)

SOC 101 Introduction to Sociology
3 credits
Gen Ed: Social Science, American Diversity
Basic theories, concepts, and processes involved in scientific study of society; includes socialization process, social inequality, the family, religion, deviance, population, the environment, and social change.

SOC 130 Introduction to Criminology
3 credits
Gen Ed: Social Science
This course provides a general introduction to the study of crime, deviance, and crime control. Course material will cover crime measurement, patterns, and trends as well as major theoretical explanations for crime. Criminal justice institutions such as police, courts, and corrections will be considered along with specific topics as they relate to criminology. These topics include social deviance, violence, white collar crime, terrorism, vice, drug use, organized crime, mental health issues, racial inequalities, women and crime, and the depiction of crime in popular media and culture. Specific crime control policies are also considered.

SOC 200 (s) Seminar
Credit arranged.

SOC 201 Introduction to Inequalities & Inclusion
3 credits
Gen Ed: Social Science, American Diversity
Cross-listed with ANTH 201
An interdisciplinary and historical study of social inequities and inclusion in a cross-cultural global context. The course examines multiple forms of diversity and stratification including, but not limited to, culture, class, race/ethnic, gender/sexuality, religious diversity, and political ideology in an effort to raise students' ability to interact with and understand others in our increasingly multicultural world. Courses may vary in their emphasis on United States' or international experiences. May include service learning.
strong>Prereq: SOC 101.

SOC 203 (s) Workshop
Credit arranged..

SOC 204 (s) Special Topics
Credit arranged.

SOC 230 Social Problems
3 credits
Gen Ed: Social Science, American Diversity
Contemporary social issues and personal deviations; crime and delinquency, poverty and wealth, drugs, sexual variations, racism, sexism, and the environment.

SOC 299 (s) Directed Study
Credit arranged.

SOC 309 Social Science Research Methods
3 credits
This course introduces students to quantitative and qualitative research methods employed in the social sciences. It will discuss research design and ethics, data collection processes, and data analysis.

SOC 311 Development of Social Theory
3 credits
Cross-listed with RELS 311
Development of social theory from classical roots through contemporary schools; biographical accounts and original works in sociological theory. Additional projects/assignments required for graduate credit.
Prereq: SOC 101.

SOC 316 Explore Mentoring & Leadership
3 credits
Cross-listed with INTR 316 and PSYC 317
Through the study of both mentoring as well as leadership, this course will prepare students to become effective mentors, citizens and members of the larger community. The course will cover a broad range of topics including: mentoring skills; leadership language, theory and style; communication and conflict; social justice and multiculturalism; values and ethics; and social change.

SOC 317 Tribal Sovereignty and Federal Policy
3 credits
Cross-listed with AIST 314, ANTH 314
The Tribal Sovereignty and Federal Policy course is designed to provide an in-depth understanding of how colonial and Federal Indian Policies have impacted the lives of Tribes and their surrounding communities. Through a survey of the changing eras of policy (conquest, pre-Revolutionary approaches, the Marshall Trilogy, the Treaty Era, Allotment and Termination, and Self-Determination), students will learn about the forces that have shaped tribal communities, and a deeper appreciation for tribes' efforts to restore and exercise their sovereignty. Tribal Sovereignty as it applies to land management, natural resources and community development will be a focal area.

SOC 319 (s) Tribal Elders Series
3 credits, max 9
Cross-listed with AIST 321, ANTH 321
This course is intended to share information from the neighboring tribes surrounding the University of Idaho. Elders from these communities will share a tribal epistemology that each tribe considers to be essential to an education of an adult. Such educational perspective may often be missing/misrepresented or misunderstood in current university pedagogy. This class will place an emphasis on contemporary indigenous voices. This course will have a subtopic heading to incorporate the possibility of having many neighboring tribes participate.

SOC 325 Family, Violence, and Society
3 credits
Sociological analysis of the family, its relationship to other social institutions, and the ways that the family is intersected by conflict, violence and systems of justice. Special attention is given to exploring the causes and impacts of family violence, strategies for its prevention, treatment of those abused, and intervention strategies for abusers.
Prereq: SOC 101.

SOC 327 Sociology of the Family
3 credits
This class is designed to help students critically evaluate and understand the ways they think about families and the role of the families. In this course we will examine families as social institutions that vary across time and culture, the ways that families shape and are constrained by structural conditions, and the interactions between the family and other social institutions.
Prereq: SOC 101.

SOC 328 Deviant Behavior
3 credits
This course is a critical examination of the relationship between deviance and social control. It will investigate how and why certain forms of behavior come to be known as deviant, analyze the nature of formal and informal responses to deviance, and explain the interaction of different social control institutions. Specific topics may include corruption, drug use, prostitution, criminal violence, gangs, corporate crime, and heroic deviance.
Prereq: SOC 101.

SOC 329 Homicide
3 credits
This course provides an analysis of the dynamics and processes associated with various types of homicides, as well as the theoretical explanations of homicide. Topics may include familial homicide, serial homicide, homicide associated with cults, and gang-related homicide, among others. Issues related to criminal justice processing of offenders are also discussed.
Prereq: SOC 101.

SOC 330 Juvenile Delinquency
3 credits
Extent, causes, and control of juvenile delinquent behavior.
Prereq: SOC 101 and SOC 328.

SOC 331 Criminology Theory
3 credits
Review and assessment of common explanations of crime, deviant behavior and control. May include field trips.
Prereq: SOC 101.

SOC 332 Sociology of Punishment
3 credits
This course will provide an introduction to the history of criminal punishment, as well as the moral rationales for criminal punishment. The remainder of the course will focus on contemporary issues in crime, criminal punishment and imprisonment. Throughout the course, particular attention will be given to the ways that decisions about punishment affect and are affected by American culture and social structure. May include field trips.
Prereq: SOC 101.

SOC 333 Elite and White Collar Crime
3 credits
The costs, causes, and control of crime by and against businesses and other organizations; the relationship between trust and white collar crime; the impact of the media in shaping perceptions of white collar crime.
Prereq: SOC 101.

SOC 334 Police and Social Control
3 credits
History, development, and role of the police as a component of the justice system, with particular attention to the relationship of the police to community, society, and related institutions of social control; societal control of the police as well as the influences of social change and urban decay and disorder on methods of policing. May include field trips.
Prereq: SOC 101.

SOC 335 Terrorism, Society and Justice
3 credits
Analysis of the concepts, issues and dilemmas related to domestic and international terrorism. Terrorist tactics within the context of the global world-system is considered. Examines counterterrorist strategies and the media and government response to terrorism.

SOC 336 Comparative Criminal Justice Systems
3 credits
Gen Ed: Social Science, International
Comparative study of justice systems in selected foreign countries. (Alt/yrs)
Prereq: SOC 101.

SOC 337 Violence and Society
3 credits
Explores the sources and types of violence, victims of violence, impact of firearms on violence, responses to violence by intergovernmental, national criminal justice systems, and non-state actors, and ways to reduce violence in society.
Prereq: SOC 101 or Instructor Permission.

SOC 338 Regulation of Vice
3 credits
This course explores the intersection of morality, law, and criminal justice through the examination of "vice" crime, such as illegal drug use, gambling, and sex work. The goal of the class is to explore the socially constructed nature of vice and examine the different socio-legal strategies that have been mobilized to control vice, such as criminalization, decriminalization, regulation, and harm reduction. The class will pay particular attention to the intended and unintended consequences that different social control schemes can have on the lives of racial and ethnic minorities, the poor, and urban communities.
Prereq: SOC 101 or Instructor Permission.

SOC 339 Crime and the Media
3 credits
Cross-listed with JAMM 339
Critical evaluation of the media portrayals of crime and the criminal justice system; analysis of how the media help to shape public understanding and public policy.

SOC 340 Social Change & Globalization
3 credits
Gen Ed: Social Science, International
This course introduces students to various discussions of social change and globalization. Area emphasis within the study of social change and globalization will vary depending on instructor.

SOC 341 Science, Technology, and Society
3 credits
This course situates science and technology in the social context. The course draws from Sociology of Science and Science and Technology Studies to examine the nature of scientific expertise, processes of knowledge creation, interrelationship between science and technology, impacts of science and technology on society, and science policy. Students will develop the ability to ask important questions about how the human world affects science and technology -- and how science and technology affects the human world.

SOC 342 Gender and Science
3 credits
This course examines the growing body of scholarship that analyzes the intersections of gender, sexuality, science, and technology. Throughout the course, students will explore the various barriers of expertise, the production of scientific knowledge, and the effects of technological developments. Students will participate in a learning community that allows them to shape their own directions of inquiry and develop their skills as scholarly investigators.

SOC 343 Power, Politics, and Society
3 credits
Gen Ed: Social Science, International
Examines the relationship between political and social institutions, the distribution of power and authority in society, the origins and expansion of the modern state, social and cultural basis of political behavior, and characteristics of transnational and global governance. Recommended Preparation: SOC 230.
Prereq: SOC 101 or Instructor Permission.

SOC 345 Criminology
3 credits
This course explores sociological perspectives on extremism in American society. We will consider the socio-structural factors that contribute to a rise in extremist activism, that motivate people to join these organizations, and that provide political opportunity for organizational growth. The class will also explore the historical and contemporary circulation of extremist discourse and ideology in more mainstream spaces. Finally, the course will examine the impact these organizations have on broader society: culture, ideology, political discourse, etc. To accomplish this, the course will focus on case studies of past and current reactionary groups, including hate groups (KKK, neo- Nazi), militia and patriot groups (Posse Comitatus), terrorist groups, and other examples of extremism.
Prereq: SOC 101 or Instructor Permission.

SOC 346 Responding to Risk
3 credits
This course uses risk as a paradigm for a sociological analysis of agency and structure. Students are introduced to various theories and frameworks for modeling risk. The course investigates risk in individual and group behavior, decision making in situations of risk, and risk in the workings of social institutions and social practices, within the areas of crime and deviance, science and technology, health, and the environment.
Prereq: SOC 101 or Instructor Permission.

SOC 350 Food, Culture, and Society
3 credits
Gen Ed: Social Science, American Diversity
Cross-listed with ANTH 350
Examines the structural and cultural implications of eating and producing food in a global world. Utilizing a social scientific framework, it explores the history of particular foods and examines how food systems are racialized, classed and gendered. Primary foci include the social history of food holidays and taboos, the relationships between food and identity, the impact of agricultural production practices on food systems and food security, and forms of resistance to these impacts. Recommended Preparation: ANTH 220 or a 200-level sociology course. May include field trips.
Prereq: SOC 101.

SOC 400 (s) Seminar
Credit arranged
Prereq: SOC 101.

SOC 403 (s) Workshop
Credit arranged
Prereq: SOC 101.

SOC 404 (s) Special Topics
Credit arranged
Prereq: SOC 101.

SOC 415 Citizen's Police Academy
3 credits
Offered only in the spring term, students are acquainted with the activities of a local police department in a community-learning style course. This experience is an opportunity for applied learning in the field. Limited space available. Instructor permission required. Pass/fail only.

SOC 416 Qualitative Social Science Methods
3 credits
Cross-listed with ANTH 416
This course introduces students to social science research methods that collect qualitative data. It will discuss research design and ethics, data collection processes, and data analysis.
Prereq: SOC 101.

SOC 417 Social Data Analysis
3 credits
Cross-listed with ANTH 417
This course introduces students to social science research methods that collect quantitative data. It will discuss research design and ethics, data collection processes, and data analysis.
Prereq: STAT 251 and SOC 101.

SOC 420 Sociology of Law
3 credits
The course examines law creation and law enforcement in their social, political, and economic context. Discussions include the major theories of the role of law and functioning of the modern state, and through the use of historical and contemporary case studies students will evaluate the strengths and weaknesses of these theoretical perspectives.

SOC 421 Gender and Crime
3 credits
This course uses sociological and criminological theories to explore the relationship between gender and crime. Topics explore adult and juvenile females and their entry into the criminal justice system as victims and offenders. The course examines the challenges faced by females working in criminal justice (policing, courts, and corrections). Gender is also discussed by considering issues faced by the LGBT community in terms of how particular behaviors are criminalized, how LGBT individuals are treated within and by the criminal justice system.
Prereq: SOC 101.

SOC 423 Economic (In)Justice in the United States
3 credits
Gen Ed: Social Science, American Diversity
This course investigates how United States' institutions create and maintain conditions of economic inequality and injustice. Various angles of inquiry include the unequal distribution of wealth amongst different social groups, the rising power of financial institutions, the prevalence of housing insecurity, the causes and consequences of consumer indebtedness and bankruptcy, and unequal community development.
Prereq: SOC 101 or Instructor Permission.

SOC 424 Sociology of Gender
3 credits
Gen Ed: Social Science, American Diversity
Historical and comparative analysis of the various roles, statuses, and life opportunities of men and women; emphasis on how gender roles develop in society and their effect on social structure, social institutions, and interpersonal interaction.
Prereq: SOC 101 and a 3 cr lower-division SOC course, or SOC 301/ANTH 301.

SOC 427 Racial and Ethnic Relations
3 credits
Gen Ed: Social Science, American Diversity
Cross-listed with ANTH 427
Examination of the social construction of racial categories and meanings; theories of race relations; historical and contemporary experiences of racial/ethnic groups in the U.S.; contemporary issues and debates.
Prereq: SOC 101 and a 3 cr lower-division SOC course, or SOC 301/ANTH 301.

SOC 428 Self and Society
3 credits
This course provides an overview of sociological social psychological research examining the significance of the self within the larger society. Specific attention is paid to symbolic interactionism, including its historical and philosophical roots, its key concepts and ideas, and its different theoretical frameworks and methodologies. Various social psychological topics (e.g., the construction of the self, socialization, deviance, mental health, collective behavior) are examined from a symbolic interactionist perspective.

SOC 435 Psychopathy and Crime
3 credits
This course provides a general introduction to psychopathy. Emphasis is placed on the perceptions, misconceptions, and the realities of the relationship between psychopathy and crime. In addition, the course explores the historical development of psychopathy, key diagnostic criteria, and the biological and psychological correlates of the disorder.
Prereq: SOC 130.

SOC 436 Mental Health and Crime
3 credits
This course examines the historical and contemporary relationships between mental health and criminal/deviant behavior. Emphasis is placed on the criminalization of mental illness, the reciprocal influence between mental health and criminal offending, and the role of clinical diagnoses in the criminal justice system.
Prereq: SOC 130.

SOC 439 Inequalities in the Justice System
3 credits
Gen Ed: Social Science, American Diversity
Critical focus on the issues of race, class, and gender and their consequences for the operation of the justice system; the role of the justice system in the history and experience of various minorities, theories of minority crime, and issues of selective enforcement, sentencing disparity, and disproportionate incarceration; the role of gender considered through the examination of offenders, victims, and criminal justice professionals.
Prereq: SOC 101 and a 3 cr lower-division Soc course, or SOC 301/ANTH 301.

SOC 441 Inside Out
3 credits
Inside Out is a prison exchange class that takes place within a correctional institution in Idaho. The course focuses on a variety of topics ranging from philosophical perspectives of justice to historical perceptions of biology and crime. The class includes both university and incarcerated students and emphasizes peer learning and collaboration. Instructor permission required.
Prereq: SOC 101 .

SOC 442 Substance Use and Society
3 credits
This course reviews the current theory, empirical research, and controversies in relation to substance use in American society. It focuses on current and historical trends in substance use, definitions of substance use and abuse, the effects of substance use, cultural understandings and media portrayal of drugs and their use, and alcohol and drug policy.

SOC 450 Dynamics of Social Protest
3 credits
Gen Ed: Social Science, American Diversity
Examines the conditions under which social protest occurs, social movement dynamics and processes, and the state's response to political dissent. Addresses how political, organizational, and cultural dimensions shape social movement development, strategies and tactics, and individual participation. Applies sociological theories and concepts to several U.S. and international movements including civil rights, women's, environmental, antiwar, and global justice movements. Recommended Preparation: SOC 230.
Prereq: SOC 101.

SOC 460 Capstone: Sociology in Action
3 credits
Gen Ed: Senior Experience
Sociology in Action is designed to provide the resources and guidance necessary for sociology seniors to complete an independent or collaborative research project.
Prereq: SOC 101 and Senior Standing and Major in Department of Sociology and Anthropology; or Permission.

SOC 461 Capstone:Justice Policy Issues
3 credits
Gen Ed: Senior Experience
Justice Policy Issues is designed to provide the resources and guidance necessary for sociology seniors to complete an independent or collaborative policy-oriented research project.
Prereq: SOC 101 and Senior Standing and Major in Department of Sociology and Anthropology; or Permission.

SOC 462 Senior Practicum
3 credits
Gen Ed: Senior Experience
This course will involve an applied, on-site experience with an organization or group. The applied experience will be the basis for a thesis that will analyze the applied experience by incorporating theory, methods, and knowledge gained from previously-taken sociology classes. In addition, the practicum will include class meetings covering topics related to the applied experience and career paths for majors in Sociology.
Prereq: SOC 101.

SOC 464 Criminology Abroad
3 credits
Gen Ed: Senior Experience
Criminology Abroad combines a 10-day intensive study abroad experience (typically a faculty-led trip over spring break), along with instruction in comparative criminology. Besides an experience abroad a student completes a directed research project related to criminology in the visited country.
Prereq: SOC 101 .

SOC 465 Environment, Policy, and Justice
3 credits
Joint-listed with ANTH 465
The "environment" in modern times has been treated as something separate from human communities, yet our experiences and common understandings of progress and prosperity are integrally tied to our daily interactions with the environment. Environmental and human disasters in recent years have further reminded us of the importance of seeing our dependence on environmental health. This course surveys different perspectives surrounding environmental issues and society's connection to them. Courses will slightly differ in emphasis depending on the instructor, allowing opportunities to explore more deeply how social philosophies, policies, and criminological dimensions can be linked to studying environment. Additional work required for graduate credit.

SOC 468 Capstone: Applied Sociology
3 credits
This course offers sociology seniors the opportunity to pursue applied approaches to sociology. Opportunities include qualified internships or faculty directed projects.
Prereq: SOC 101 and Senior Standing and Major in Department of Sociology and Anthropology; or Permission.

SOC 495 (s) Practicum In Tutoring
1 credit, max 2
Tutorial services performed by advanced students under faculty supervision. Graded P/F.
Prereq: SOC 101 and Permission.

SOC 498 (s) Internship
1-6 credits, max arranged
Supervised professional field experience in human service organizations. Graded P/F.
Prereq: SOC 101 and departmental major and Permission.

SOC 499 (s) Directed Study
Credit arranged
Intended to accommodate a wide variety of sociological topics.
Prereq: SOC 101 and Permission.

SOC 501 (s) Seminar
Credit arranged
Subjects normally offered: sociological research, social problems, and social theory.
Prereq: Permission.

SOC 502 (s) Directed Study
Credit arranged
Subjects normally offered: sociological theory, human ecology, and race relations.
Prereq: Permission.

SOC 504 (s) Special Topics
Credit arranged.

SOC 599 (s) Non-thesis Master's Research
Credit arranged.

SOILS (SOIL)

SOIL 205 The Soil Ecosystem
3 credits
Gen Ed: Natural and Applied Sciences
Introduction to the physical, chemical, and biological nature of soils.
Prereq: CHEM 101 or CHEM 111 or Instructor Permission.

SOIL 206 The Soil Ecosystem Lab
1 credit
Gen Ed: Natural and Applied Sciences
Lab study relevant to SOIL 205. Experiments and demonstrations on basic and applied aspects of soil science. One 3-hour lab a week.
Coreq: SOIL 205.

SOIL 210 Food Systems and Healthy Lifestyles
3 credits
Introduction to food systems including the historical development of our current global food system. Linkages among the production, marketing and transportation of food and food policy on human health will be explored. Students will complete a semester-long assessment of the local food system and its impacts on individual, school and community health and strategies to improve the food system.

SOIL 299 (s) Directed Study
Credit arranged.

SOIL 398 (s) Internship
1-6 credits, max 6
Graded P/F.
Prereq: Permission of department.

SOIL 400 (s) Seminar
Credit arranged.

SOIL 404 (s) Special Topics
Credit arranged.

SOIL 415 Soil and Environmental Physics
3 credits
Joint-listed with SOIL 515
Physical properties of soils and their relationships to moisture, aeration, and temperature; plant-soil-atmospheric relationships; solute transport and soil salinity. Two lec and one 3-hr lab a wk. Recommended Preparation: SOIL 205, SOIL 206, and PHYS 111. SOIL 415 is a cooperative course available to WSU degree-seeking students. (Alt/yrs, Fall)

SOIL 417 Market Garden Practicum
1-6 credits
Experiential learning based course that covers all aspects of running a small acreage vegetable farm. Topics include farm planning, crop rotation, soil fertility and testing, weed management and food systems. Students satisfy credit hours through participation in lecture/discussion, field work and field trips. Class meets at the Plant Science Farm. Recommended preparation: SOIL 205. (Summer only)

SOIL 422 Environmental Soil Chemistry
3 credits
Chemical processes in soil environment. Recommended Preparation: SOIL 205, SOIL 206, and CHEM 112. Cooperative: open to WSU degree-seeking students. (Alt/yrs)

SOIL 425 Microbial Ecology
3 credits
Joint-listed with SOIL 525
Biogeochemical activities and relationships of microorganisms in soil, water, plants, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: MATH 143. (Spring alt/yrs).
Prereq: BIOL 154 or 250.

SOIL 427 Sustainable Food Systems
3 credits
Gen Ed: Senior Experience
Joint-listed with SOIL 527
The purpose of this course is to help students apply systems thinking and systems methodological problem solving skills to identify and describe current and future food system issues. Through lectures, case studies and research students will explore elements and behavior of food systems that impart sustainability. Students taking the course for graduate credit will complete additional readings, research and presentations.
Prereq: FOR 221, REM 221, or SOIL 210; or Instructor Permission.

SOIL 438 Pesticides in the Environment
3 credits
Gen Ed: Senior Experience
Cross-listed with ENT 438 and PLSC 438
Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Recommended Preparation: CHEM 275.

SOIL 446 (s) Soil Fertility
1-3 credits, max 3
Principles of soil fertility management; availability of plant nutrients and their relationship to plant growth and fertilization practices. Recommended Preparation: SOIL 205 and 206.

SOIL 450 Environmental Hydrology
3 credits
Cross-listed with ENVS 450
Carries no credit after BE 355 or CE 325. Comprehensive understanding of the hydrologic processes associated with the environmental processes. Includes components of the hydrologic cycle, analysis of precipitation and run off, evapotranspiration, routing, peak flow, infiltration, soil and water relationships, snowmelt, and frequency analysis. (Spring only)
Prereq: MATH 170 .

SOIL 452 Environmental Water Quality
3 credits
Joint-listed with SOIL 552
Engineering design to monitor, evaluate, and minimize non-point pollution from agriculture, environmentally acceptable disposal of wastes, bioremediation. Graduate credit requires an additional project and report. Two lectures and one 3-hour lab a week.
Prereq: BE 355 and CHEM 112, CHEM 112L; and SOIL 205 or BIOL 250.

SOIL 454 Pedology
3 credits
Morphology, genesis, and classification of soils; distribution of soils as related to environmental processes and factors. Two lectures and one 4-hr lab a week. Recommended Preparation: SOIL 205 and SOIL 206. Cooperative: open to WSU degree-seeking students.

SOIL 456 North Idaho Field Trip
1 credit
Soils and land use in northern Idaho ecosystems; emphasis on soil parent materials, soil formation and morphology, and soil-plant community relationships. Graded P/F. One 3-day field trip; additional class meetings and assignments before and after field trip. Cooperative: open to WSU degree-seeking students.
Prereq: SOIL 205 or Permission.

SOIL 499 (s) Directed Study
Credit arranged.

SOIL 500 Master's Research and Thesis
Credit arranged.

SOIL 501 (s) Seminar
Credit arranged.

SOIL 502 (s) Directed Study
Credit arranged.

SOIL 504 (s) Special Topics
Credit arranged.

SOIL 514 Environmental Geophysics
3 credits
This course will provide an introduction to near-surface geophysical techniques. The aim is to provide a solid foundation on physical principles used to non-invasively study characteristics and properties of the earth in general, and the shallow subsurface in particular. We will discuss applications ranging from eco-hydrology, precision agriculture, and civil engineering to archeology. The course consists of two parts. Lectures will provide a conceptual understanding of the theory and methods, and a field-based case study will apply these concepts collecting integrated geophysical data that will be processed and interpreted to introduce students to practical procedures and challenges in environmental geophysics. Cooperative: open to WSU degree-seeking students.

SOIL 515 Soil and Environmental Physics
3 credits
Joint-listed with SOIL 415
Physical properties of soils and their relationships to moisture, aeration, and temperature; plant-soil-atmospheric relationships; solute transport and soil salinity. Two lec and one 3-hr lab a wk. Recommended Preparation: SOIL 205, SOIL 206, and PHYS 111. (Alt/yrs, Fall)

SOIL 525 Microbial Ecology
3 credits
Joint-listed with SOIL 425
Biogeochemical activities and relationships of microorganisms in soil, water, plants, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: MATH 143. (Spring alt/yrs).
Prereq: BIOL 154 or 250.

SOIL 527 Sustainable Food Systems
3 credits
Joint-listed with SOIL 427
The purpose of this course is to help students apply systems thinking and systems methodological problem solving skills to identify and describe current and future food system issues. Through lectures, case studies and research students will explore elements and behavior of food systems that impart sustainability. Students taking the course for graduate credit will complete additional readings, research and presentations.
Prereq: FOR 221, REM 221, or SOIL 210; or Instructor Permission.

SOIL 537 Soil Biochemistry
3 credits
Origin, chemical structure, and significance of soil biochemical compounds. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: SOIL 422, BIOL 380, BIOL 250 or Permission.

SOIL 552 Environmental Water Quality
3 credits
Joint-listed with SOIL 452
Engineering design to monitor, evaluate, and minimize non-point pollution from agriculture, environmentally acceptable disposal of wastes, bioremediation. Graduate credit requires an additional project and report. Two lectures and one 3-hour lab a week.

SOIL 597 (s) Practicum
Credit arranged.

SOIL 598 (s) Internship
Credit arranged
Graded P/F.
Prereq: Permission.

SOIL 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

SOIL 600 Doctoral Research and Dissertation
Credit arranged.

SPANISH (SPAN)

Vertically-related courses in this subject field are: SPAN 101 - SPAN 102 (or SPAN 104)- SPAN 201 - SPAN 202. Any one of the following courses may be considered the terminal course for the related vertical sequence above: SPAN 301 or SPAN 302. A maximum of 16 credits may be earned for vertical credit in any language in the Department of Modern Languages & Cultures.

SPAN 101 Elementary Spanish I
4 credits
Gen Ed: Humanities, International
Credit not given for SPAN 101 after SPAN 104 with the exception of vertical credit (see Regulation I-2-d). Pronunciation, vocabulary, reading, spoken Spanish, and functional grammar. Students with Spanish experience who place higher than SPAN 101 on the placement exam may not enroll in SPAN 101 but may earn credit for SPAN 101 by successfully completing a higher vertically related course.

SPAN 102 Elementary Spanish II
4 credits
Gen Ed: Humanities, International
Credit not given for SPAN 102 after SPAN 104. Pronunciation, vocabulary, reading, spoken Spanish, and functional grammar.
Prereq: SPAN 101 or placement exam.

SPAN 104 Elementary Spanish Transition
4 credits
Gen Ed: International
Credit not given for SPAN 104 after SPAN 101 or SPAN 102. Not open to students who have completed SPAN 101 or equivalent in college. Intensive, web-assisted Elementary Spanish course intended for students with some previous study of Spanish. Review and practice of the subject matter covered in SPAN 101 and 102: pronunciation, vocabulary, reading, listening, speaking, and functional grammar. Recommended Preparation: One-two years of high school Spanish or equivalent experience.

SPAN 105 Beginning Spanish Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the beginning Spanish level. Graded P/F.

SPAN 200 (s) Seminar
Credit arranged.

SPAN 201 Intermediate Spanish I
4 credits
Gen Ed: International
Reading, grammar review, speaking, and writing.
Prereq: SPAN 102, SPAN 104 or placement exam.

SPAN 202 Intermediate Spanish II
4 credits
Gen Ed: International
Reading, grammar review, speaking, and writing.
Prereq: SPAN 201 or placement exam.

SPAN 204 (s) Special Topics
Credit arranged.

SPAN 205 Intermediate Spanish Conversation Lab
1 credit, max 2
Practice in listening comprehension and conversational skills at the intermediate Spanish level. Graded P/F.

SPAN 299 (s) Directed Study
Credit arranged.

SPAN 301 Advanced Grammar
3 credits
Gen Ed: International
Recommended for prospective teachers of Spanish.
Prereq:SPAN 202 or placement exam.

SPAN 302 Advanced Composition
3 credits
Gen Ed: International
Recommended for prospective teachers of Spanish.
Prereq: SPAN 301 or Permission.

SPAN 303 Spanish Conversation
3 credits
Gen Ed: International
Further development of speaking skills for advanced students; discussion on topics of current cultural interest.
Prereq: SPAN 302 or Permission.

SPAN 305 Culture and Institutions of Spain
3 credits
Gen Ed: International
Prereq: SPAN 302 or Permission.

SPAN 306 Culture and Institutions of Latin America
3 credits
Gen Ed: American Diversity, International
Cross-Listed with LAS 306
Prereq: SPAN 302 or Permission.

SPAN 308 Proficiency in Reading
3 credits
Gen Ed: International
Issues and methods of literary analysis; emphasis on reading, writing, and speaking skills in the target language.
Prereq: SPAN 302 or Permission.

SPAN 309 Spanish for Business
3 credits
Spanish for business, including vocabulary and cultural competency.
Prereq: SPAN 302 or Permission.

SPAN 310 Spanish for the Professions I
3 credits
Gen Ed: International
Language and cultural competency for fields including law, police and the community, banking, finances, and human resources.
Prereq: SPAN 302 or Permission.

SPAN 313 Spanish for the Professions II
3 credits
Language and cultural competency for fields including medicine (social workers, dentists, doctors, and nurses), technology and computer science, human resources, real estate, and housing.
Prereq: SPAN 302 or Permission.

SPAN 398 (s) Internship
Credit arranged.

SPAN 400 (s) Seminar
Credit arranged
Prereq: SPAN 302 or Permission.

SPAN 401 Readings: Spanish Literature
3 credits
Gen Ed: International
Prereq: SPAN 302 or Permission.

SPAN 402 Readings: Spanish American Literature
3 credits
Gen Ed: International
Prereq: SPAN 302 or Permission.

SPAN 404 (s) Special Topics
Credit arranged
Prereq: SPAN 302 or Permission.

SPAN 405 (s) Professional Development
Credit arranged.

SPAN 409 Modern Latin American Society
3 credits
Gen Ed: International
Cross-listed with LAS 409
Analysis of contemporary issues in Latin American society such as gender, race, environment, and immigration from a variety of cultural perspectives (film, newspapers, literature, etc.).
Prereq: SPAN 306 or LAS 306.

SPAN 412 Spanish Short Fiction
3 credits
Gen Ed: International
A survey of the short story in Spain from the 19th Century to the present. Focus on major writers and representative movements and styles. (Fall only)
Prereq: SPAN 302 or Permission.

SPAN 413 Spanish American Short Fiction
3 credits
Gen Ed: American Diversity, International
Cross-listed with LAS 413
The short story in 19th- and 20th-century Spanish America.
Prereq: SPAN 302.

SPAN 419 Latin America Theatre Through Literature
3 credits
Gen Ed: International
Study of representative dramatic works of Latin America.
Prereq: SPAN 302 or Permission.

SPAN 420 Modern Spanish Theatre Through Literature
3 credits
Gen Ed: International
Study of representative dramatic works of modern Spain.
Prereq: SPAN 302 or Permission.

SPAN 421 Bilingual and Bicultural Identities
3 credits
Gen Ed: International
The course consists of literary works, theoretical readings, films and documentaries concerned with the complexity of Bilingual and Bicultural concepts. Some of the pressing topics covered in this course will respond to interrogatives such as: What is Bilingual/Bicultural? How does this state affect the development of an identity within the context of Americanness as it is reflected in the Latino/Hispanic Experience in the U.S.? The course will also focus on negotiation of Latin@ Identity (Mexican/Chicano, Dominican, Puerto Rican/Newyorican, and Cuban/American experiences); Concepts of Race; Immigration, Politics of Identity, Language, Gender and the importance of family to these issues.
Prereq: SPAN 302 or Instructor Permission.

SPAN 422 Mexican Culture through Cinema
3 credits
Gen Ed: International
Cross-listed with LAS 422
Examines how fictional representations of Mexico are driven by specific historical, political, economic, and cultural forces. Students will also reflect on the ways in which films and literature can inform our knowledge of race, gender and socio-economic relations and how these representations of Mexican culture through film have changed over time.
Prereq or Coreq: SPAN 306 or LAS 306.

SPAN 423 Culture and Identity in Spanish Cinema
3 credits
Gen Ed: International
Examines how Spanish film explores questions of culture and identity.
Prereq or Coreq: *SPAN 305.*

SPAN 424 Human Rights and Hispanic Cinema
3 credits
Cross-listed with LAS 424
Examines how Hispanic film represents and grapples with the question of human rights.
Prereq or coreq: *SPAN 305.*

SPAN 425 Spanish-English Translation Skills
3 credits
Theory and practice of translation, Spanish-English and English-Spanish, using a variety of types of text.
Prereq: *SPAN 302 or Permission.*

SPAN 449 (s) Practicum in Tutoring
1 credit, max 2
Graded P/F. Tutorial services performed by advanced students under faculty supervision.
Prereq: *Permission of Department.*

SPAN 498 (s) Internship
Credit arranged*.*

SPAN 499 (s) Directed Study
Credit arranged*.*

STATISTICS (STAT)

STAT 204 (s) Special Topics
Credit arranged.

STAT 251 Statistical Methods
3 credits
Gen Ed: Mathematics
Credit not awarded for STAT 251 after STAT 301 or STAT 416, or for STAT 416 after STAT 251 or STAT 301.
Intro to statistical methods including design of statistical studies, basic sampling methods, descriptive statistics, probability and sampling distributions; inference in surveys and experiments, regression, and analysis of variance.
Prereq: One of the following: MATH 108, MATH 143, MATH 160, MATH 170, or Sufficient score on SAT, ACT, or math placement test (see www.uidaho.edu/registrar/registration/placement).

STAT 299 (s) Directed Study
Credit arranged.

STAT 301 Probability and Statistics
3 credits
Credit not awarded for STAT 251 after STAT 301 or STAT 416, or for STAT 416 after STAT 251 or STAT 301.
Intended for engineers, mathematicians, and physical scientists. Intro to sample spaces, random variables, statistical distributions, hypothesis testing, basic experimental design, regression, and correlation.
Prereq: MATH 175.

STAT 404 (s) Special Topics
Credit arranged.

STAT 407 Experimental Design
3 credits
Joint-listed with STAT 507
Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Additional work required for 500-level credit. Cooperative: open to WSU degree-seeking students for credit.
Prereq: STAT 431 .

STAT 416 Statistical Methods for Research
3 credits
Credit not awarded for STAT 251 after STAT 301 or STAT 416, or for STAT 416 after STAT 251 or STAT 301.
Concepts and methods in quantitative research including observational and experimental study design, point estimation, hypothesis testing, effect size, sample size, causation, one and two-way ANOVA, simple linear regression, interpreting and reporting results.
Prereq: One of the following: MATH 108, MATH 143, MATH 160, MATH 170, or Sufficient score on SAT, ACT, or math placement test (see www.uidaho.edu/registrar/registration/placement).

STAT 419 Introduction to SAS/R Programming
3 credits
An introduction to the SAS and R programming languages. Topics include creating data, importing data, accessing subsets of data, exporting data, plotting and graphing, loops and functions. Course provides a basic knowledge of SAS and R to help students master statistical tools available in SAS and R, including basic statistical analyses.
Prereq: STAT 251, STAT 301, or STAT 416 .

STAT 422 Sample Survey Methods
3 credits
Introduction to survey sampling designs and inference including simple, stratified, and cluster sampling; ratio and regression estimators, unequal probability sampling, and population size estimation. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 251 or STAT 301 or STAT 416.

STAT 426 SAS Programming
3 credits
Coverage of a variety of methods for data manipulation, data management, and programming in the SAS language. DATA step programming methods including data transformation, functions for numeric and character data, input of complicated data files, and do loop usage. Data management topics include concatenating data files, sorting and merging data files and ARRAY statement usage. SAS programming with SAS modules such as SAS/Graph, SAS/IML, and SAS/Macro language. Other topics in SAS programming, such as covering other SAS modules in depth.
Prereq: STAT 251 or STAT 301 or STAT 416 .

STAT 427 R Programming
3 credits
Credit not awarded for STAT 427 after STAT 419.
Introduction to the R computing language for scientific graphics, statistical analysis, simulation, and mathematical modeling. Topics include functions, data management and manipulation, loops and logical structures, vector and matrix calculations, contemporary graphical displays, probability and simulation, dynamic models, numerical optimization, standard methods of statistical analysis.
Prereq: STAT 251 or STAT 301 or STAT 416 .

STAT 431 Statistical Analysis
3 credits
Concepts and methods of statistical research including multiple regression, contingency tables and chi-square, experimental design, analysis of variance, multiple comparisons, and analysis of covariance. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 251, STAT 301, or STAT 416.

STAT 433 Econometrics
3 Credits
Cross-listed with ECON 453
Application of statistical methods to economics and business studies; emphasis on regression analysis methods.
Prereq: STAT 251 or STAT 301.

STAT 436 Applied Regression Modeling
3 credits
Joint-listed with STAT 516
Statistical modeling and analysis of scientific date using regression model including linear, nonlinear, and generalized linear regression models. Topics also include analysis of survival data, censored and truncated response variables, categorical response variables, and mixed models. Emphasis is on application of these methods through the analysis of real data sets with statistical packages. Additional coursework/projects will be assigned at the 500-level.
Prereq: STAT 431 .

STAT 451 Probability Theory
3 Credits
Cross-listed with MATH 451
Random variables, expectation, special distributions (normal, binomial, exponential, etc.), moment generating functions, law of large numbers, central limit theorem. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: MATH 275, or Permission
Coreq: MATH 275.

STAT 452 Mathematical Statistics
3 credits
Cross-listed with MATH 452
Estimation of parameters, confidence intervals, hypothesis testing, likelihood ratio test, sufficient statistics. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: MATH 451 or Permission.

STAT 453 Stochastic Models
3 credits
Joint-listed with STAT 544, Cross-listed with MATH 453
Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 451 or Permission.

STAT 456 Quality Management
3 credits
Cross-listed with OM 456
Principles of total quality management, with emphasis on problem solving techniques to continually improve processes; customer-driven quality, management and employee participation, statistical process control, product/process design, and process capability. May include evening exams. May involve field trips.
Prereq: STAT 251 or STAT 301.

STAT 498 (s) Internship
Credit arranged
Prereq: Permission.

STAT 499 (s) Directed Study
Credit arranged.

STAT 500 Master's Research and Thesis
Credit arranged.

STAT 501 (s) Seminar
Credit arranged
This course addresses statistical ethics; statistically oriented research; and deeper and more extensive consideration of topics relevant to but not addressed in other graduate level statistics courses offered during that semester. Formal presentations and reports in journal format are used to enhance written, oral, and presentation communication experience and ability.

STAT 502 (s) Directed Study
Credit arranged.

STAT 503 (s) Workshop
Credit arranged.

STAT 504 (s) Special Topics
Credit arranged.

STAT 507 Experimental Design
3 credits
Joint-listed with STAT 407
Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Additional work required for 500-level credit. Cooperative: Available to WSU degree-seeking students for credit.
Prereq: STAT 431 .

STAT 514 Nonparametric Statistics
3 credits
Conceptual development of nonparametric methods including one, two, and k-sample tests for location and scale, randomized complete blocks, rank correlation, and runs test. Permutation methods, nonparametric bootstrap methods, density estimation, curve smoothing, robust and rank-based methods for the general linear model, and comparison. Comparison to parametric methods. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 431.

STAT 516 Applied Regression Modeling
3 credits
Joint-listed with STAT 436
Statistical modeling and analysis of scientific date using regression model including linear, nonlinear, and generalized linear regression models. Topics also include analysis of survival data, censored and truncated response variables, categorical response variables, and mixed models. Emphasis is on application of these methods through the analysis of real data sets with statistical packages. Additional coursework/projects will be assigned at the 500-level.
Prereq: STAT 431 .

STAT 517 Statistical Learning and Predictive Modeling
3 credits
A comprehensive overview of statistical learning and predictive modeling techniques to analyze large data sets in science, social science, and other data-rich fields including, for example, biology, business, and engineering. Topics include regression, classification, resampling methods, model selection and regularization, tree-based methods, support vector machines, clustering, and text mining. The implementation of the methods will be in R, and Python as needed. Basic experience with computer programming is assumed.
Prereq: STAT 431 .

STAT 519 Multivariate Analysis
3 credits
The multivariate normal, Hotelling's T2, multivariate general linear model, discriminant analysis, covariance matrix tests, canonical correlation, and principle component analysis. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 431.

STAT 525 Master's Econometrics
3 credits
Cross-listed with AGEC 525.
Multivariate linear regression and analysis of variance with economic applications. Cooperative: open to WSU degree-seeking students.
Prereq: STAT 431 or equivalent; or Permission of Instructor .

STAT 535 Introduction to Bayesian Statistics
3 credits
Exploring the basics of Bayesian thinking with a comparative approach to interpretations of probability. Statistical methods, Bayesian approach to statistical inference. Methods include point and interval estimation under the Normal model, and inference under hierarchical models with emphasis on statistical model building. Computational methods, applications of methods useful for sampling posterior distributions such as rejection sampling, importance sampling and Markov Chain Monte Carlo.
Prereq: STAT 431 or equivalent paperwork .

STAT 544 Stochastic Models
3 credits
Joint-listed with STAT 453, Cross-listed with MATH 538
Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 451 or Permission.

STAT 550 Regression
3 credits
Theory and application of regression models including linear, nonlinear, and generalized linear models. Topics include model specification, point and interval estimators, exact and asymptotic sampling distributions, tests of general linear hypotheses, prediction, influence, multicollinearity, assessment of model fit, and model selection. Cooperative: open to WSU degree-seeking students.
Prereq: MATH 330 and STAT 451.
Coreq: STAT 452.

STAT 555 Statistical Ecology
3 credits
Cross-listed with WLF 555
Stochastic models in ecological work; discrete and continuous statistical distributions, birth-death processes, diffusion processes; applications in population dynamics, population genetics, ecological sampling, spatial analysis, and conservation biology. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yrs)
Prereq: MATH 451 or Permission.

STAT 565 Computer Intensive Statistics
3 credits
Numerical stability, matrix decompositions for linear models, methods for generating pseudo-random variates, interactive estimation procedures (Fisher scoring and EM algorithm), bootstrapping, scatterplot smoothers, Monte Carlo techniques including Monte Carlo integration and Markov chain Monte Carlo. Cooperative: open to WSU degree-seeking students. (Alt/yrs)
Prereq: STAT 451, STAT 452, MATH 330, and computer programming experience or Permission.

STAT 597 (s) Consulting Practicum
Credit arranged
Students will gain experience in statistical consulting and data analysis, using multiple statistical software packages in the analysis process. Topics include communication of statistical information and analysis to non-statisticians, ethics, and computing. Emphasis is placed on written and oral presentation of statistical analysis plans and results.

STAT 598 (s) Internship
Credit arranged
Students gain experience in statistical consultation and / or statistical data analysis in their present place of employment or an arranged internship organization. Students are jointly accountable to a faculty advisor and a person providing oversight of the individual's efforts within the organization. All internship experiences must be pre-approved.

STAT 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

TECHNOLOGY MANAGEMENT (TM)

TM 482 Project Engineering
3 credits
Modern project engineering techniques for planning, scheduling, and controlling typical engineering and construction projects; linear programming and other optimization techniques as applied to resource allocation; microcomputer applications are emphasized and appropriate software used throughout the course.
Prereq: STAT 251, STAT 301, or Equivalent, and Senior standing or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

TM 500 Master's Research and Thesis
Credit arranged.

TM 501 (s) Seminar
Credit arranged.

TM 502 (s) Directed Study
Credit arranged.

TM 504 (s) Special Topics
Credit arranged.

TM 505 (s) Professional Development
Credit arranged.

TM 510 Technology Management Fundamentals
3 credits
Fundamental principles of technology management. The course focuses on management theory and techniques associated primarily with project management, management theory applied to high technology environments; management processes and techniques; project leadership role of the engineering manager in technology organizations; team-taught by business, engineering, and technology management faculty.
Prereq: Permission.

TM 513 Nuclear Criticality Safety
3 credits
Cross-listed with NE 535.
Nuclear criticality safety including nuclear physics, fusion and neutron multiplication, moderation and reflection of neutrons, criticality issues in the fuel cycle, critical experiments and sub-critical limits, calculations of criticality, nuclear criticality safety practices, emergency procedures, and nuclear regulations and standards.
Prereq: NE 450 or Permission.

TM 514 Nuclear Safety
3 credits
Cross-listed with NE 514. An in-depth technical study of safety issues within the nuclear fuel cycle and within various reactor types. Evaluation methods, system disturbances, safety criteria, containment, NRC licensing, and codes for safety analysis will be presented. Case studies of reactor accidents and corrective measures included.
Prereq: Permission.

TM 515 (s) Advanced Topics in Engineering Management
2-9 credits, max 9
Advanced topics in Engineering Management and Technology Management.
Prereq: Instructor Permission.

TM 516 Nuclear Rules and Regulations
3 credits
Cross-listed with NE 516.
An in-depth examination of nuclear regulatory agencies; major nuclear legislation; current radiation protection standards and organizational responsibility for their implementation.
Prereq: Permission.

TM 517 Critical Infrastructure Security and Resilience Fundamentals
3 credits
This course provides an introduction to the policy, strategy, and practical application of critical infrastructure security and resilience from an all-hazards perspective. It describes the strategic context presented by the 21st century, and discusses the challenges and opportunities associated with public-private partnerships in infrastructure protection, risk analysis and mitigation, and incident response.

TM 520 Leadership and Conflict Resolution in a Technological Environment
3 credits
The course explores leadership and related conflict management issues; personal and collective ways in which interpersonal and organizational conflict from a leadership perspective can be managed; focuses on theoretical and practical analysis of principles and processes for the management of conflict in relationships. Through a leadership framework, the skills and techniques for the identification, prevention, and resolution of conflict in interpersonal and workplace relationships will be discussed.

TM 525 Emergency Management and Planning
3 credits
A study of the basic principles in emergency management and planning in the United States. This course is not directed at any particular type of hazard, but the processes and considerations of planning for all-hazards along with the basics of generic protective actions and the planning concepts supporting effective protective action recommendations.

TM 526 Community Emergency Planning
3 credits
A study of the theory and practice of community emergency planning. The Citizen Corps, Principles of Emergency Planning, and CERT programs will be studied. Cases are studied in order to assist students in understanding the management and leadership complexity associated with modern emergencies and disasters. Recommended Preparation: TM 525.

TM 528 Accident Investigation
3 credits
In-depth examination and implementation of system safety concepts, principles, and methods; development of skills in accident investigation, audit and appraisal, operational readiness, and system safety analysis and review. Recommended Preparation: INDT 442.

TM 529 Risk Assessment
3 credits
Cross-listed with NE 529.
In-depth evaluation and analysis techniques used to determine the risk of industrial, process, nuclear, and aviation industries; fault tree analysis; human reliability analysis; failure mode and effect analysis.

TM 533 Chemical Hazards
3 credits
Emergency responders can encounter a wide range of chemical hazards. Topics include information on interpreting hazardous chemical labels and Material Safety Data Sheets and the relationship between those two methods of hazard communication. Acute and chronic effects of hazardous chemicals to which responders may be exposed will be discussed. Recommended Preparation: TM 525.

TM 534 Biological Hazards
3 credits
Emergency responders can encounter a wide range of biological hazards. The objectives of this course are to understand the nature of biological hazards and how to control them. The biological hazards to be discussed are Bacteria, Viruses, Fungi/Molds, Protozoa, Prions – infectious proteins, Biological Toxins. Recommended Preparation: TM 525.

TM 535 Radiation Detection and Measurement
3 credits
Cross-listed with NE 554.
Radiation transport and shielding concepts. Methods for quantifying attenuation of nuclear particles and electromagnetic radiation. Radiation detection methods, data acquisition and processing.
Prereq: MATH 310 or Permission.

TM 537 Nuclear Material Storage, Transportation and Disposal
3 credit
Cross-listed with NE 527.
There is a wide range of nuclear materials that are stored, transported and disposed of each day. The materials include medical radioisotopes, new fuel pellets, used fuel, and industrial radioisotopes. This course will cover the regulations that govern nuclear material storage, transportation and disposal, as well as the engineering requirements and practical aspects of handling these materials.

TM 538 Management of Nuclear Facilities
3 credits
Cross-listed with NE 528.
Nuclear facilities need a sustainable management system to make sure that matters of importance are not dealt with in isolation of other issues in the decision making process. Integrating all relevant issues, ranging from safety, security and safeguards to health and economic and environmental questions, leads to well-informed and balanced decisions. This course addresses from a practical point of view the safety and regulatory issues of operating and planned reactors in the U.S. and other countries.

TM 552 Industrial Ergonomics
3 credits
A course designed to focus on work design and ergonomics in occupational settings. Specific attention will be focused on introducing the terminology and the techniques used in work design, and on the fundamental concepts embodied in industrial ergonomics. (Summer only)

TM 596 Capstone Integration
1 credit
Capstone integration of degree material in Technology Management and comprehensive final exam.
Prereq: Advisor or Major Professor Permission.

TM 598 (s) Internship
Credit arranged.

TM 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

THEATRE ARTS (THE)

THE 101 Introduction to the Theatre
3 credits
Gen Ed: Humanities
For non-majors. Building an appreciation for theatre as an art form through understanding the creative process of the playwright, the director, the designer, and the actor. Attendance at theatre productions required.

THE 102 Introduction to Design
3 credits
An introduction to the concept of basic design elements and development of visual vocabulary for theatrical design. This course explores the creative collaborative process of theatrical design through a variety of hands-on projects in scenery, costumes, lighting and sound. This course is a prerequisite for THE 201, THE 202, THE 205.

THE 103 Theatre Technology I
3 credits
Intro to theatre production spaces, shop tools, construction materials, and stage equipment; theories and methods used in lighting and in the construction of scenery. Course includes a lab component.

THE 104 Theatre Technology II
3 credits
Methods of costume construction techniques; intro to sewing, crafting and costuming skills. Course includes a lab component.

THE 105 Basics of Performance I
3 credits
Intro to performance; techniques of relaxation, observation, and justification; work in improvisation, sensory exploration, image-making, and beginning textual analysis; initial monologue and scene performance. One lec and 2 hrs of lab a wk.

THE 106 Basics of Performance II
3 credits
A continuation in the training of performance to deepen the experiential understanding and techniques of relaxation, observation, and justification; work in improvisation, sensory exploration, image-making, and beginning textual analysis, including initial monologue and scene performance. One lec and 2 hrs of lab a wk.
Prereq: THE 105 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 110 Convocation
1 credit, max arranged
One 1-hr weekly seminar discussing performance and production techniques, process and activities.

THE 200 (s) Seminar
Credit arranged.

THE 201 Scene Design I
3 credits
Development of basic skills in visualization, period research, graphic techniques and script interpretation in scenery.
Prereq: THE 102.

THE 202 Costume Design I
3 credits
Costume design skills including script/character analysis, fabric choices, design process, period research, and drawing/painting skills.
Prereq: THE 102.

THE 203 (s) Workshop
Credit arranged.

THE 204 (s) Special Topics
Credit arranged.

THE 205 Lighting Design I
3 credits
Basic and foundational stage lighting equipment, lighting methods, and theory for theatrical production; basic electrical maintenance, hang, focus, and programming of realized productions.
Prereq: THE 102.

THE 206 Theatrical Make-up
1 credit
Practical application techniques for basic contour and old age makeup for the theatre. Limited to 20 students. 2 hrs of lab a wk.
Prereq: Theatre Major or Minor.

THE 298 (s) Internship
Credit arranged.

THE 299 (s) Directed Study
Credit arranged.

THE 305 Intermediate Acting I
3 credits
Exploration of Stanislavsky System “An Actor Prepares”, using contemporary text with emphasis on connection and pursuing action and imagery work. One lecture and 3 hours of lab a week.
Prereq: THE 105 and THE 106. A minimum grade of 'C' is required for all co/prerequisites. Permission also required.

THE 306 Intermediate Acting II
3 credits
Continued exploration of Stanislavsky System “Building a Character”, using modern classic texts such as Anton Chekhov with emphasis on emotional and physical rigor and discipline. One lecture and 3 hours of lab a week.
Prereq:THE 105 and THE 106. A minimum grade of 'C' is required for all co-prerequisites. Permission also required.

THE 311 Pattern Development Studio
3 credits, max arranged
Patterning and draping techniques for stage costume and apparel construction. May be repeated for course credit. (Fall. Alt/yrs)
Prereq: THE 104. A minimum grade of 'C' is required for all co/prerequisites.

THE 320 Theatre Management
3 credits
Basic and foundational stage management and standard management practices relating to theatre production and business, funding, and public relations.

THE 361 Technical Direction
3 credits
Technical direction and planning for single and multiple set theatre productions; includes shop and personnel management techniques, drafting, budgets, scheduling, and organization.

THE 371 Play Analysis
3 credits
Critical intro to plays as drama and theatre; an approach to tragic and comic genres; major dramatists of the 20th century culminating in an analysis of contemporary theatre styles.

THE 389 (s) Performance Area Participation
1 credit, 8 max
Open to majors and nonmajors by permission. Practical experience in acting, directing, playwriting, dramaturgy, other performance areas - rehearsal through performance.
Prereq: Permission .

THE 390 (s) Theatre Practice II
1 credit, max 8
Open to nonmajors. Advanced practical experience in all aspects of theatre production.

THE 395 Summer Theatre II
2-8 credits, max 8
Prereq: Premission of department.

THE 400 (s) Seminar
Credit arranged.

THE 403 (s) Workshop
Credit arranged.

THE 404 (s) Special Topics
Credit arranged.

THE 405 Individual Instruction in Performance
Credit arranged
Individualized coaching in performance. One hr of lab a wk per cr.
Prereq: Permission of department.

THE 406 Design Studio
credit arranged
Individual training in an area of theatre design; includes an advanced design assignment and the public presentation of a play.
Prereq: THE 201, THE 202, or THE 205; or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 410 Costume Design II
3 credits, max 12
Joint-listed with THE 510
Emphasis on developing characterization, stylization, and fabric choice; explore advanced rendering techniques; continuation of portfolio development. Additional projects/assignments required for graduate credit. Three lec and 1 hr of lab a wk.
Prereq: THE 202 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 417 Movement Studio
3 credits, max 18
Joint-listed with THE 517
Emphasizes body awareness utilizing yoga and related techniques to increase strength and flexibility, heighten sensory awareness, generate dynamic energy, and mind/body connections. Students are encouraged to explore the creative boundaries of their body and discover the body's effectiveness as a primary expressive tool in performance. Students earning graduate credit will be held to a higher standard.
Prereq: Acceptance into B.F.A./M.F.A. program or Permission.

THE 421 Advanced Theatre Management
3 credits
Joint-listed with THE 521
Exploration of advanced theatre management and business management practices relating to theatre production, operations, development, funding, public relations and marketing. Additional projects will be required for graduate credit. Additional projects/assignments required for graduate credit.
Prereq: THE 320 or instructor permission.

THE 425 BFA Acting Studio
3 credits, max arranged
Joint-listed with THE 525
Rigorous study and practice in performance. Areas of specialization may include: Shakespeare, Devising, Commedia del'arte, Period Styles, Asian Theatre, Animals, Realism, Comedy. The course will be repeated each semester by BFA candidates.
Prereq for 425: Acceptance into BFA program.
Prereq for 525: Acceptance into MFA program.

THE 440 Playwriting
3 credits
Joint-listed with THE 540
Introduce the student to the fundamental elements of playwriting, including dramatic structure and action, developing theme and characterization, understanding stagecraft and writing dialogue.

THE 447 Screenwriting
3 credits
Joint-listed with THE 547, Cross-listed with ENGL 447 and JAMM 447
Introduction to Study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.
Prereq: ENGL 231 or JAMM 231; Permission .

THE 460 Professional Theatre Conference Participation
1 credit, max 12
Joint-listed with THE 560
Professional Theatre Conference Participation. Additional work required for graduate credit.

THE 463 Advanced Costume Technology Studio
3 credits, max arranged
Advanced theatrical costume construction techniques and strategies, including: tailoring, costume crafts and period undergarment construction. Materials selection and handling. May be repeated for course credit. Recommended Preparation: The 311. (Fall, Alt/yrs.)
Prereq: THE 104 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 464 Scenographic Techniques
3 credits
Joint-listed with THE 564
Practical survey of graphics used in design and execution of scenery for the stage, including drafting, perspective, front and rear elevations, painters elevations, and properties design and drafting.
Prereq: THE 201 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 465 Advanced Scene Design
3 credits
Joint-listed with THE 565
Development of a conceptual approach to design through assorted design projects.
Prereq: THE 201 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 466 Scene Painting
3 credits
Joint-listed with THE 566
Introduction to the art, practice and technique of large-scale decorative painting for the stage. Development of brush and application techniques, color mixing, and layout skills. Provides instruction in the imitation of wood, marble, brick and stone, as well as sections on stenciling, faux finishing and trompe l'oiel. (Fall only)
Prereq: THE 201 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 468 Theatre History
3 credits
Gen Ed: Humanities, International
A comprehensive survey of the major theatrical trends, theorists, and practitioners from the Golden Age of Greece to 1914.

THE 471 Directing
3 credits
Joint-listed with THE 571
Preparation of a play from casting to performance. Additional projects/assignments required for graduate credit. Three lec and one hr of lab a wk. Recommended Preparation: THE 305.

THE 472 Directing II
3 credits
Joint-listed with THE 572
Staging and interpretation of a play; developing a production concept; coaching actors. Additional projects/assignments required for graduate credit. Three lec and one hr of lab a wk. Recommended Preparation: Upper-division acting course at 300/400 level.
Prereq: Permission.

THE 483 Senior Capstone Project
1 credit
Gen Ed: Senior Experience
A capstone class for graduating theatre majors that requires students to synthesize their experiences in dramatic theory, literature, theatre performance, and production. Seminar students prepare a service learning project and a personal philosophy statement that summarizes their experience and their current vision of the theatre. The class also includes a component in resume preparation and professional presentation.

THE 484 Advanced Lighting Design
3 cr, max 12
Joint-listed with THE 584
Advanced lighting design theories and practice through design of assorted productions in realistic drama, dance, arena, thrust, and mystical theatre. Heavy emphasis on design communication and computer drafting. Additional projects/assignments required for graduate credit.
Prereq: THE 205 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 498 (s) Internship
Credit arranged.

THE 499 (s) Directed Study
Credit arranged.

THE 501 (s) Seminar
Credit arranged.

THE 502 (s) Directed Study
Credit arranged.

THE 503 (s) Workshop
Credit arranged.

THE 504 (s) Special Topics
Credit arranged.

THE 510 Costume Design II
3 credits, max 12
Joint-listed with THE 410
Emphasis on developing characterization, stylization, and fabric choice; explore advanced rendering techniques; continuation of portfolio development. Additional projects/assignments required for graduate credit. Three lec and 1 hr of lab a wk.
Prereq: THE 202 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 512 (s) MFA Directing Studio
3 cr, max 18
Advanced individual study in directing, including work in staging, styles, and interpretation.

THE 513 (s) MFA Design Studio
3 credits, max 18
Advanced individual study in all areas of theatrical design with emphasis on portfolio development.

THE 514 (s) MFA Production Studio
3 credits, max 18
Advanced individual study in all areas of technical theatre production and management with emphasis on portfolio development.

THE 515 MFA Jury/Portfolio Review
1 credit, max arranged
Preparation and evaluation of performance monologues and design portfolios.
Coreq: MFA studio courses.

THE 516 MFA Graduate Seminar
3 cr, max arranged
An in-depth, rigorous, exploration of theatrical research and collaboration pedagogy and methodologies within the larger context of the artistic, creative process. Course may be repeated.
Prereq: Acceptance into MFA program.

THE 517 Movement Studio
3 credits, max 18
Joint-listed with THE 417
Emphasizes body awareness utilizing yoga and related techniques to increase strength and flexibility, heighten sensory awareness, generate dynamic energy, and mind/body connections. Students are encouraged to explore the creative boundaries of their body and discover the body's effectiveness as a primary expressive tool in performance. Students earning graduate credit will be held to a higher standard.
Prereq: Acceptance into B.F.A./M.F.A. program or Permission.

THE 521 Advanced Theatre Management
3 credits
Joint-listed with THE 421
Exploration of advanced theatre management and business management practices relating to theatre production, operations, development, funding, public relations and marketing. Additional projects will be required for graduate credit. Additional projects/assignments required for graduate credit.
Prereq: THE 320 or instructor permission.

THE 522 (s) Advanced Studies in Theatre
3 credits, max 18
This course is for advanced studies in theatre history, analysis, and criticism for creative writing, performance, directing, design, and technology graduate candidates. Topics are coordinated and rotated departmentally and are beyond the departmental history and play analysis core.

THE 525 MFA Acting Studio
3 credits, max arranged
Joint-listed with THE 425
Rigorous study and practice in performance. Areas of specialization may include: Shakespeare, Devising, Commedia del'arte, Period Styles, Asian Theatre, Animals, Realism, Comedy. The course will be repeated each semester by BFA candidates.
Prereq for 425: Acceptance into BFA program.
Prereq for 525: Acceptance into MFA program.

THE 526 MFA Playwriting Workshop
3 credits, max 18
The primary goal of the MFA Playwriting Workshop is to help the writers develop their unique voice and vision; understand the role of the writer within a historical, cultural and political context; and expose them to a variety of styles and approaches to creating new work for both stage and screen. Toward that end, the Playwriting Workshop fosters a safe but challenging creative environment, in which writers are presented with assignments designed to help them identify that set of aesthetic concerns which will form the foundation of their Voice and Style as a writer. MFA candidates in Dramatic Writing enroll in this course each semester they are in the program.

THE 535 Production Design
3 credits, max 12
Design responsibility for a mainstage production.
Prereq: Permission of department.

THE 540 Playwriting
3 credits
Joint-listed with THE 440
Introduce the student to the fundamental elements of playwriting, including dramatic structure and action, developing theme and characterization, understanding stagecraft and writing dialogue.

THE 547 Screenwriting
3 credits
Joint-listed with THE 447
Introduction to Study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.
Prereq: ENGL 231 or JAMM 231; Permission.

THE 560 Professional Theatre Conference Participation
1 credit, max 12
Joint-listed with THE 460
Professional Theatre Conference Participation. Additional work required for graduate credit.

THE 564 Scenographic Techniques
3 credits
Joint-listed with THE 464
Practical survey of graphics used in design and execution of scenery for the stage, including drafting, perspective, front and rear elevations, painters elevations, and properties design and drafting.
Prereq: THE 201 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 565 Advanced Scene Design
3 credits
Joint-listed with THE 465
Development of a conceptual approach to design through assorted design projects.
Prereq: THE 201 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 566 Scene Painting
3 credits
Joint-listed with THE 466
Introduction to the art, practice and technique of large-scale decorative painting for the stage. Development of brush and application techniques, color mixing, and layout skills. Provides instruction in the imitation of wood, marble, brick and stone, as well as sections on stenciling, faux finishing and trompe l'oiel. (Fall only)
Prereq: THE 201 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 571 Directing
3 credits
Joint-listed with THE 471
Preparation of a play from casting to performance. Additional projects/assignments required for graduate credit. Three lec and one hr of lab a wk. Recommended Preparation: THE 305.

THE 572 Directing II
3 credits
Joint-listed with THE 472
Staging and interpretation of a play; developing a production concept; coaching actors. Additional projects/assignments required for graduate credit. Three lec and one hr of lab a wk. Recommended Preparation: Upper-division acting course at 300/400 level.
Prereq: Permission.

THE 584 Advanced Lighting Design
3 cr, max 12
Joint-listed with THE 584
Advanced lighting design theories and practice through design of assorted productions in realistic drama, dance, arena, thrust, and mystical theatre. Heavy emphasis on design communication and computer drafting. Additional projects/assignments required for graduate credit.
Prereq: THE 205 or Permission. A minimum grade of 'C' is required for all co/prerequisites.

THE 595 Professional Off-Campus Studio
3 credits, max 18
This is a studio course designed for professional off-campus graduate students only. The course is composed of one on one mentoring for off-campus projects.
Prereq: Permission.

THE 596 MFA Exit Project
3 credits
Culminating creative project for MFA candidates.
Prereq: Permission of department.

THE 597 (s) Practicum
Credit arranged
This course is an experiential learning course supervised by theatre faculty to provide the student with a practical application of theatrical theory.

THE 598 (s) Internship
Credit arranged.

THE 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

VIRTUAL TECHNOLOGY/ DESIGN (VTD)

VTD 101 Introduction to Virtual Reality
3 credits
This course explores introductory design methods for virtual reality (VR) design and technical application. Designed to allow students the ability to rapidly develop their programming, and technical design skills required to produce VR experiences. Three 1 hour online lecture/lab a week and associated work.

VTD 151 Virtual World Building 1
2 credits
Introduction to the processes and principles of design associated with virtual world building. Two 2-hr lectures a week and assigned work. Recommended Preparation: ART 110 and 121.

VTD 151L Lab: Virtual World Building 1
1 credit
This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 151: Virtual World Building 1 course.
Coreq: VTD 151 or Permission .

VTD 152 Virtual World Building 2
2 credits
Applied tools and techniques. Exploration of the processes and principles of design associated with virtual building. Two 2-hr lectures a week and assigned work. Recommended Preparation: ART 110 and ART 121, VTD 151. (Spring only)

VTD 152L Lab: Virtual World Building 2
1 credit
This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 152: Virtual World Building 2 course.
Coreq: VTD 152 or Permission.

VTD 153 Virtual World Building 3
2 credits
Intermediate level virtual world building with an emphasis on intermediate-level tools and techniques for creating more complex environments, modeling, lighting, materials, characters, interaction, and behaviors. Two 2-hr lectures a week and assigned work. Recommended Preparation: ART 110 and ART 121.

VTD 153L Lab: Virtual World Building 3
1 credit
This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 153: Virtual World Building 3 course.
Coreq: VTD 153 or Permission.

VTD 154 Virtual World Building 4
2 credits
Synthesis of processes, principles, tools and techniques associated with virtual world building. Two 2-hr lectures a week and assigned work. Recommended Preparation: ART 110 and 121.

VTD 154L Lab: Virtual World Building 4
1 credit
This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 154: Virtual World Building 4 course.
Coreq: VTD 154 or Permission.

VTD 200 (s) Seminar
Credit arranged.

VTD 201 History & Theory of VR
3 credits
This seminar course is designed to develop the historical and philosophical understanding of virtual reality (VR) technology and its cultural evolution. The course will explore the formal description of VR technology and interpret recent psychological theories of VR knowledge construction.
Prereq: VTD 154.

VTD 204 (s) Special Topics
Credit arranged.

VTD 244 Introduction to 3D Modeling
3 credits
Introduction to 3D digital modeling focused on high and low poly polygon hard surface assets and digital sets (including basic lighting and materials). Two 1-1/2hr lecture/lab a wk and associated work.
Prereq: Major in Virtual Technology and Design; non-majors by permission as space permits.

VTD 245 Advanced Modeling
3 credits
Exploration of methods used for modeling and sculpting organic surfaces focused on the creation of character and avatar for high and low polygon 3D digital models. Three 1 hr lecture/lab a wk and associated work. (Fall only)
Prereq: VTD 244 or Permission.

VTD 246 Advanced Lighting and Materials
3 credits
Exploration of methods for illuminating and texturing virtual objects and environments. Foreground, middleground and background rendering issues are examined through topics that include radiosity, ray-tracing, procedural materials and render engine options. Three 1hr lecture/lab a wk and associated work. (Fall only)
Prereq: VTD 244 or Permission.

VTD 253 Virtual Design I
3 credits
Investigation of the art and science of virtual design, integrating creative problem solving skills with computer technologies. Sequence of exercises explores the problem domains of virtual objects and environments. Two 3-hr studios a week and assigned work. (Fall only)
Prereq: ART 121 and VTD 152; or Permission.

VTD 254 Virtual Design II
3 credits
Continued development of critical thinking and problem solving skills through a sequence of exercises that emphasize design process, concept and context driven solutions to virtual, tangible and integrated projects. Two 3-hr studios a week and assigned work. (Spring only)
Prereq: VTD 253 or Permission.

VTD 266 Animation
3 credits
Introduction to 3D computer-generated animation addressing interface, character rigging, and linear animation. Two 1-1/2hr lecture/lab a wk and associated work. (Spring only)
Prereq: VTD 244 or Permission.

VTD 271 Cross-Reality Technology 1
3 credits
Introduction to the fundamentals of Cross-Reality (XR) technologies, explore the development and delivery of interactie immersive digital worlds that transform/combine physical reality into virtual experiences. Two 1-1/2hr lecture/lab a wk and associated work. (Fall only)
Prereq: VTD 154 and VTD 244; or Permission.

VTD 299 (s) Directed Study
Credit arranged.

VTD 301 Theory & Applications of VR
3 credits
This seminar course is designed to develop the student's understanding of virtual reality (VR) design theory and application. The course will challenge students to develop new concepts for VR that have the potential to significantly impact society and expand on current concepts of the built environment.
Prereq: VTD 201 or permission.

VTD 355 Virtual Design III
4 credits
Introduction to virtual design & relationship to human needs; focus on design process & expansion of vocabulary associated with virtual environments; experimentation & creativity encouraged. Three 3-hr Studios a wk and assigned work. (Fall only)
Prereq: VTD 254 or Permission.

VTD 356 Virtual Design IV
4 credits
Design development of conceptual & technical aspects of virtual environments; exploration of design issues from conception to delivery. Three 3-hr studios a wk and assigned work. (Spring only)
Prereq: VTD 355 or Permission.

VTD 367 Visual Effects
3 credits
Exploration of methods used for visual and experiential communication, problem solving, and storytelling through linear and interactive 3D computer generated animation. Three 1 hour lecture/lab a week and associated work. (Spring only)
Prereq: VTD 266 or Permission .

VTD 372 Cross-Reality Technology 2
3 credits
Building upon the foundational knowledge of Cross-Reality (XR) technologies, exploring how current and emerging versions of XR technologies can enhance XR interactions (boject-oriented and event-driven) and user experiences (story telling/presence/social/multiuser) in virtual worlds. Two 1-1/2hr lecture/lab a wk and associated work. (Spring only)
Prereq: VTD 271 or Permission.

VTD 380 Advanced Character Design
3 credits
Exploration of advanced workflows and methods for entertainment focused character design. This course will cover advanced digital painting techniques and basic image compositing in Photoshop while also covering digital sculpting and rendering using Zbrush. One (3 hour) lecture/lab with associated work.
Prereq: Instructor Permission .

VTD 398 (s) Internship
Credit arranged.

VTD 400 (s) Seminar
3 credits.

VTD 404 (s) Special Topics
Credit arranged.

VTD 444 Other Media
3 credits
Exploration of new or emerging technologies including but not limited to software and various hardware devices. The focus is on the communicative, affective, and interactive possibilities of the technology and their application within research or creative production.
Prereq: Permission .

VTD 457 Capstone Design Studio I
6 credits
Gen Ed: Senior Experience
Sequential contract courses built around the collective content of five interdisciplinary clusters; research, design & implementation of comprehensive virtual design project. Three 3-hr studios a wk and associated work.
Prereq: VTD 356.

VTD 458 Capstone Design Studio II
6 credits
Sequential contract courses built around the collective content of five interdisciplinary clusters; research, design & implementation of comprehensive virtual design project. Three 3-hr studios a wk and associated work.
Prereq: VTD 457.

VTD 497 Teaching Assistant, Undergraduate
Credit arranged
Teaching assistant services performed by advanced undergraduate students with faculty supervision.

VTD 499 (s) Directed Study
Credit arranged.

WATER RESOURCES (WR)

WR 500 Master's Research and Thesis
Credit arranged.

WR 501 (s) Seminar
Credit arranged.

WR 502 (s) Directed Study
Credit arranged.

WR 503 (s) Workshop
Credit arranged.

WR 504 (s) Special Topics
Credit arranged.

WR 505 (s) Professional Development
Credit arranged.

WR 506 Interdisciplinary Methods in Water Resources
3 credits
Student and faculty teams from traditionally disparate disciplines address real issues to develop methods for communicating across disciplines and for solving water resources problems. The course takes a problem-oriented approach using case studies. Faculty will lead students through this integrative process with lectures and working sessions. (Fall only)

WR 507 Integrated Water Resources Projects
3 credits
In a seminar style format, students present and discuss disciplinary and interdisciplinary aspects of thesis/dissertation research, and finish writing of interdisciplinary aspects of their thesis/dissertation. (Spring only)
Prereq: WR 506.

WR 598 (s) Internship
Credit arranged.

WR 599 (s) Non-thesis Master's Research
Credit arranged.

WR 600 Doctoral Research and Dissertation
Credit arranged.

WR 601 (s) Seminar
Credit arranged.

WR 604 (s) Special Topics
Credit arranged.

WILDLIFE RESOURCES (WLF)

WLF 102 The Fish and Wildlife Professions
1 credit
Cross-listed with FISH 102.
Orientation of students to the profession of fishery resources and wildlife resources: introduction to fish and wildlife faculty, review of fish and wildlife curriculum, awareness of career opportunities, employment procedures, associated job duties/responsibilities, job preparation, educational preparation, and management challenges in the Pacific Northwest. (Fall only)

WLF 105 Hunter Education
1 credit
The course provides an overview of hunter ethics; wildlife management, conservation, and survival; and wildlife laws and law enforcement. This course also fulfills the state requirement for hunter education for purchase of a hunting license. Course includes in-class instruction and one outdoor field day. Graded Pass/Fail.

WLF 200 (s) Seminar
Credit arranged.

WLF 201 Fish and Wildlife Applications
2 credits
This course will introduce students to research and monitoring methods, data analysis and report writing in fish and wildlife sciences, potential state, federal and tribal employers, and management challenges for fish and wildlife populations and habitats. The course will include an off campus experiential learning field trip and activities with professional mentors.
Prereq: NR 101 or Permission .

WLF 203 (s) Workshop
Credit arranged.

WLF 204 (s) Special Topics
Credit arranged.

WLF 205 Wildlife Law Enforcement
2 credits
This course will provide students with an introduction to the history of wildlife laws and the role of a Conservation Officer. It will also provide students with a better understanding of wildlife crimes and the impact they have on fish and wildlife. This course is designed for students seeking a career in wildlife law enforcement as well as those pursuing a career in wildlife/fisheries/habitat management.

WLF 220 Principles of Ecology
3 credits
Cross-listed with FOR 221 and REM 221.
Principles of ecology and their relevance to management of natural resources. Major topics include plant and wildlife population, community, ecosystem, and landscape level processes and how these processes interact with the environment. Exploration of how ecosystems are affected by humans and global change. Introduction to the types of questions asked by ecologists, the principal concepts and theories that guide ecological inquiry, and the methods that are used to answer ecological questions. Both terrestrial and aquatic systems are considered.
Prereq: BIOL 102/BIOL 102L or BIOL 114 or BIOL 115 or PLSC 205; or Permission.

WLF 299 (s) Directed Study
Credit arranged.

WLF 314 Ecology of Terrestrial Vertebrates
3 credits
Ecology and natural history of birds, mammals, reptiles, and amphibians. (Fall only)
Prereq: FOR 221, REM 221, or BIOL 314.

WLF 315 Techniques Laboratory
2 credits
Techniques associated with wildlife research and local habitats and areas where wildlife species are present. Three hours of lab a week. One weekend field trip required. Two additional animal trapping sessions also required. (Fall only)
Prereq or Coreq: WLF 314 .

WLF 370 Management and Communication of Scientific Data
3 credits
Students will learn skills to analyze manage and present scientific data in the fish and wildlife field. Analyses will be conducted in R, spreadsheets and basic data management software. Data summaries will include graphical and tabular presentation. Written presentation of scientific information will include organization, grammar, and citation formats appropriate for scientific reports.

WLF 371 Physiological Ecology of Wildlife
2 credits
Study of how biotic and abiotic components of the environment influence animal physiology, and how the physiology of animals influences their ecology (e.g., behavior, distribution, etc.). Major topics include energetics, thermal ecology, nutritional ecology, reproductive physiology, locomotion and movement, and adaptations to extreme environments. (Spring only)
Prereq: BIOL 213 .

WLF 398 (s) Renewable Natural Resources Internship
Credit arranged
Supervised field experience with an appropriate public or private agency. Reqd for cooperative education students. Graded P/F.
Prereq: Permission of department .

WLF 400 (s) Seminar
Credit arranged
Prereq: permission.

WLF 403 (s) Workshop
Credit arranged.

WLF 404 (s) Special Topics
Credit arranged.

WLF 411 Wildland Habitat Ecology and Assessment
2 credits
Cross-listed with REM 411
This course integrates field sampling with quantitative and theoretical concepts related to scientific research, wildlife habitat, and land management practices. Students collect, analyze, and report on ecological data in various formats, and learn specific protocols used by professionals to assess wildlife habitat. Class field trips required. Recommended preparation: REM 252 and REM 253, REM 341, or other plant identification class; ability to use excel. Co-enrollment in REM 410 is recommended.
Prereq: STAT 251 or Permission.

WLF 415 Wildlife Conclave
1 credit
Objectives of the course are to 1) acquaint students with the procedures and rules used in the Wildlife Quiz Bowl at the Western Students Wildlife Conclave held annually in March, 2) practice in game situations so that our team is competitive at the event, and 3) to learn practical facts and trivia about wildlife natural history, identification, history of wildlife management and laws, wildlife ecology and management, and related natural resource sciences. The course meets twice a week from the beginning of spring semester until spring break (when Conclave is held). Students are assigned areas to study, have quizzes on those areas of knowledge and provide new written questions with answers for possible use in future classes.

WLF 416 Molecular Methods in Population Biology
1 credit
Joint-listed with WLF 516.
Introductory workshop on basic procedures in molecular biology that have applications in ecology and evolutionary biology. Course includes DNA/RNA extraction, PCR, simple recombinant DNA procedures, DNA sequencing, and data analysis. Graduate level will require independent study project. Recommended preparation: Introductory level genetics, general and organic chemistry courses. (Fall only)
Prereq: Permission.

WLF 440 Conservation Biology
3 credits
Patterns of biological diversity; factors producing changes in diversity; values of diversity; management principles applied to small populations, protected areas, landscape linkages, biotic integrity, restoration, legal issues, and funding sources. (Fall only)
Prereq: FOR 221, REM 221, or BIOL 314 or Permission.

WLF 448 Fish and Wildlife Population Ecology
4 credits
Dynamics of animal populations resulting from balance between birth, death, and movement processes; quantitative methods for measuring distribution, abundance, survival and population growth; competition, predation, and self-regulation; viability and management of fish and wildlife populations. Three lec and one lab a wk. One weekend field trip required. (Spring only)
Prereq: STAT 251; MATH 160 or 170.

WLF 473 ECB Senior Presentation
1 credit
Gen Ed: Senior Experience
Cross-listed with FISH 473, FOR 473, NRS 473, REM 473, and RMAT 473
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with WLF 485 or WLF 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).
Prereq: Instructor Permission.

WLF 482 Ornithology
4 credits
Evolution, systematics, distribution, identification, and biology of birds, including current conservation efforts. Requires two days of field trips. (Spring only)
Prereq: BIOL 114 and BIOL 115.

WLF 483 Senior Project Presentation
1 credit
Cross-listed with FISH 483, FOR 483, NRS 483, and REM 483
Reporting and presenting the senior project (thesis or internship); taken after or concurrently with WLF 485 or WLF 497.

WLF 485 Ecology and Conservation Biology Senior Project
1-3 credits, max 3
Cross-Listed with FISH 485, FOR 485, and NRS 485
Scholarly work; learning objectives include development and formal proposal of a specific project and conducting the project or research with the guidance of a faculty mentor.

WLF 492 Wildlife Management
4 credits
Gen Ed: Senior Experience
Review of social and biological context for current practice of wildlife management including a hands on wildlife management project. Three lectures and one lab a week; two days of field trips. (Spring only)
Prereq: WLF 314, Senior Standing.
Prereq or Coreq: WLF 448.

WLF 497 Senior Thesis
1-3 credits, max 6
Preparation of thesis, exhibition, video, computer program, multimedia program, or other creative presentation based on research conducted under the guidance of a faculty mentor.
Prereq: Cumulative GPA of at least 3.2 in all college courses, completion of at least 90 credits, and permission of a faculty mentor.

WLF 499 (s) Directed Study
Credit arranged
For the individual student; conferences, library, field, or lab work.
Prereq: Senior standing, GPA 2.5, and Permission.

WLF 500 Master's Research and Thesis
Credit arranged.

WLF 501 (s) Seminar
Credit arranged
Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Graded P (pass)/F (fail).
Prereq: Permission.

WLF 502 (s) Directed Study
Credit arranged.

WLF 503 (s) Workshop
Credit arranged
Selected topics in the conservation and management of natural resources.
Prereq: Permission.

WLF 504 (s) Special Topics
Credit arranged.

WLF 505 (s) Professional Development
Credit arranged.

WLF 506 (s) External Speakers
1 credit, max 6
Students will attend (or view recorded) seminars of fish and wildlife researchers and managers invited to present in our departmental seminar series. Students will read papers of external speakers, lead discussions of papers and assist with hosting speakers. Graded Pass/Fail.

WLF 516 Molecular Methods in Population Biology
1 credit
Joint-listed with WLF 416.
Introductory workshop on basic procedures in molecular biology that have applications in ecology and evolutionary biology. Course includes DNA/RNA extraction, PCR, simple recombinant DNA procedures, DNA sequencing, and data analysis. Graduate level will require independent study project. Recommended preparation: Introductory level genetics, general and organic chemistry courses. (Fall only)
Prereq: Permission.

WLF 540 Conservation Genetics
1-3 credits, max 3
Basic principles of population genetics and phylogenetics and their applications to the field of conservation and natural resource management. Taught in three 1-credit modules, and students can register for 1-3 credits. Module 1 includes introduction to conservation genetics and phylogenetics, module 2 includes population genetic theory and methods, and module 3 includes applications in conservation genetics and genomics. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yrs)

WLF 545 Wildlife Habitat Ecology
2-3 credits
Reading and discussion on habitat concepts, analyses, and applications. Students enrolled in the 3rd credit will complete additional readings and quantitative problem sets. Cooperative: open to WSU degree-seeking students.
Prereq: WLF 492 or Permission, animal and plant ecology.

WLF 550 Quantitative Analysis of Fish and Wildlife Populations
2 credits
Contemporary mathematical and statistical models central to fish and wildlife research and management, including capture-recapture, occupancy, resource selection, movement, population, growth, hierarchical models.
Prereq: MATH 160 or equivalent, STAT 431.

WLF 551 Applied Mixed Effects Modeling
2 credits
Analysis of complex ecological data with mixed effects models and their various extensions. After a brief review of generalized linear modeling, students will gain practical experience in the use of linear and generalized linear modeling, students will gain practical experience in the use of linear and generalized linear mixed models to analyze hierarchical datasets (continuous, count, binary, etc.) that include inherent serial or spatial autocorrelation. Cooperative: open to WSU degree-seeking students. (Fall, Alt/yrs)
Prereq: STAT 431.

WLF 552 Ecological Modeling
3 credits
Linear and nonlinear dynamical models of biological systems; computer-intensive introduction to concepts of stability, attractors, bifurcations, chaos; model identification, estimation, and evaluation; applications in aquatic and terrestrial ecological communities. (Spring only, Alt/yrs)
Prereq: MATH 175 and FOR 221 or Permission.

WLF 555 Statistical Ecology
3 credits
Cross-listed with STAT 555
Stochastic models in ecological work; discrete and continuous statistical distributions, birth-death processes, diffusion processes; applications in population dynamics, population genetics, ecological sampling, spatial analysis, and conservation biology. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yrs)
Prereq: MATH 451 or Permission.

WLF 561 Landscape Genetics
2 credits
Landscape genetics is an interdisciplinary field of study that evaluates how landscape and environmental features influence gene flow, population structure and local adaptation by integrating landscape ecology, population genetics and spatial statistics. This course covers applications of landscape genetics that can improve our understanding of ecology, evolution, and management of wild populations. Recommended Preparation: Population genetics or conservation genetics, and multivariate or spatial statistics. Cooperative: open to WSU degree-seeking students. (Spring, alt/even yrs)

WLF 562 Landscape Genetics Lab
1-2 credits
This optional lab course is a complement to WLF 561 Landscape genetics and should be taken concurrently. Students will learn to analyze and interpret landscape genetic datasets using a variety of methods. If taken for two credits, students will do a project analyzing landscape genetic data. Recommended Preparation: Population genetics or conservation genetics, and multivariate or spatial statistics. Cooperative: open to WSU degree-seeking students. (Spring, alt/even yrs)
Coreq: WLF 561.

WLF 575 Behavioral Ecology
2 credits
Behavioral Ecology is the study of evolutionary causes and fitness consequences of behavioral decisions by animals. This course will explore theoretical and empirical approaches to understanding behavioral ecology across a diversity of species, with an emphasis on vertebrates. The format will include short lectures and facilitated discussions of primary literature. The course is open to graduate students and seniors with instructor permission. Cooperative: Available to WSU degree-seeking students.

WLF 598 (s) Internship
Credit arranged.

WLF 599 (s) Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission.

WLF 600 Doctoral Research and Dissertation
Credit arranged
Prereq: Admission to the doctoral program in "natural resources" and Permission of department.

WOMEN'S, GENDER, AND SEXUALITY STUDIES (WGSS)

WGSS 201 Introduction to Women's, Gender, and Sexuality Studies
3 credits
Gen Ed: Humanities, American Diversity
Survey of and introduction to the study of women's lives and the social construction of gender and sexuality across times and cultures. Thematic examination of the diversity of women's experiences in families, at work, with the law, in health care, in literature, in the media, in language; exploration of differences and similarities, including ethnicity, sexuality, class, and age. Examination of ideals of femininity and masculinity in the US and elsewhere.

WGSS 367 (s) Topics in Women's, Gender, and Sexuality Studies
3 credits, max arr
Topical examination of issues in women's, gender and sexuality studies.

WGSS 404 (s) Special Topics
Credit arranged.

WGSS 410 Feminist Theory and Action
3 credits
This course examines a range of feminist theory, including both classic and lesser-known texts, while grounding the study of theory in an examination of historical and contemporary feminist activism. The course covers some of the key concepts and debates within feminism and explores the relationship between theory and action. Students learn how to read theory and apply their knowledge to current events, issues, and problems in the United States and globally.

WGSS 498 (s) Internship in Women's, Gender, and Sexuality Studies
1-6 credits, max arr
Directed student internship in approved setting relevant to women's, gender, and sexuality studies with campus, local, national, or international organizations or offices. Various credits depending on the length and type of internship.
Prereq: WGSS 201, Permission of the Coordinator of Women's, Gender, and Sexuality Studies.

WGSS 499 (s) Directed Study
Credit arranged.

WGSS 502 (s) Directed Study
Credit arranged.

WASHINGTON STATE UNIVERSITY COOPERATIVELY OFFERED COURSES

WSU Cooperative Courses Open to UI students (as of 6/2019)

Students may search for the cooperative courses that are offered for any particular semester by going to http://schedules.wsu.edu/Coop/ and choosing the appropriate fall or spring semester.

Subject	Number	Course Title and Credits
AFS	**590**	**Sociology of Agriculture and Food Systems** (3 cr)
AGTM	**305**	**Agricultural Precision Systems (**3 cr)
AGTM	**315**	**Irrigation Systems and Water Management (**3 cr)
ANIM SCI	**101**	**Introductory Animal Science (**3 cr)
ANIM SCI	**172**	**Dairy Cattle Management Laboratory** (1 cr)
ANIM SCI	**174**	**Beef Cow Calf Management Laboratory** (1 cr)
ANIM SCI	**178**	**Swine Management Laboratory** (1 cr)
ANIM SCI	**260**	**Live Animal and Carcass Evaluation** (3 cr)
ANIM SCI	**274**	**Beef Feedlot Systems** (2 cr)
ANIM SCI	**285**	**Rights and Welfare of Animals** (3 cr)
ANIM SCI	**313**	**Feeds and Feeding** (4 cr)
ANIM SCI	**314**	**Principles of Nutrition** (3 cr)
ANIM SCI	**330**	**Animal Genetics** (3 cr)
ANIM SCI	**345**	**Introduction to Animal Growth and Development** (3 cr)
ANIM SCI	**346**	**Introduction to Skeletal Muscle Physiology** (3 cr)
ANIM SCI	**350**	**Physiology of Reproduction** (3 cr)
ANIM SCI	**351**	**Physiology of Reproduction Laboratory** (1 cr)
ANIM SCI	**360**	**Meat Science** (3 cr)
ANIM SCI	**405**	**Ciders and Other Fermented Foods** (3 cr)
ANIM SCI	**451**	**Endocrine Physiology** (3 cr)
ANIM SCI	**454**	**Artificial Insemination and Pregnancy Detection** (2 cr)
ANIM SCI	**460**	**Advanced Meat Science** (3 cr)
ANIM SCI	**464**	**Companion Animal Management** (3 cr)
ANIM SCI	**472**	**Dairy Cattle Management** (3 cr)
ANIM SCI	**473**	**Advanced Dairy Management** (3 cr)
ANIM SCI	**478**	**Swine Production** (3 cr)
ANIM SCI	**485**	**Applied Animal Behavior** (3 cr)
ANIM SCI	**488**	**Perspectives in Biotechnology** (3 cr)
ANIM SCI	**513**	**Mineral and Vitamin Metabolism** (4 cr)
ANIM SCI	**551**	**Endocrine Physiology** (3 cr)
ANIM SCI	**558**	**Molecular and Cellular Reproduction** (3 cr)
ANIM SCI	**588**	**Perspectives in Biotechnology** (3 cr)
ANIM SCI	**598**	**Advanced Topics in Animal Sciences (**V 1-2 cr)
ANTH	**450**	**Descriptive Linguistics** (3 cr)
ANTH	**463**	**Introduction to Anthropological Demography and Epidemiology** (3 cr)
ANTH	**465**	**Human Evolution** (3 cr)
ANTH	**535**	**Cultural Resource Management** (3 cr)
ANTH	**550**	**Descriptive Linguistics** (3 cr)
ANTH	**563**	**Introduction to Anthropological Demography and Epidemiology** (3 cr)
ANTH	**565**	**Human Evolution** (3 cr)
ANTH	**573**	**Zooarchaeology** (4 cr)
ARCH	**490**	**Seminar in Architectural Design** (V 1-4 cr)
ASIA	**111**	**Asian Film** (3 cr)
ASIA	**121**	**Modern Chinese Culture** (3 cr)
ASIA	**131**	**Masterpieces of Asian Literature** (3 cr)
ASIA	**320**	**Issues in East Asian Ethics** (3 cr)
ASIA	**330**	**The Art of War** (3 cr)
ASTRONOM	**581**	**Advanced Topics in Astronomy** (3 cr)
BIOLOGY	**324**	**Comparative Vertebrate Anatomy** (4 cr)
BIOLOGY	**416**	**Fisheries Management** (4 cr)
BIOLOGY	**469**	**Ecosystem Ecology and Global Change** (3 cr)
BIOLOGY	**494**	**Seminar in Mathematical Biology** (1 cr)
BIOLOGY	**514**	**Fish Genetics** (2 cr)
BIOLOGY	**519**	**Introduction to Population Genetics** (3 cr)
BIOLOGY	**540**	**Stable Isotope Theory and Methods** (3 cr)
BIOLOGY	**548**	**Evolutionary Ecology of Populations** (3 cr)
BIOLOGY	**563**	**Field Ecology** (2 cr)
BIOLOGY	**566**	**Mathematical Genetics** (3 cr)
BIOLOGY	**569**	**Ecosystem Ecology and Global Change** (3 cr)
BIOLOGY	**579**	**Mathematical Modeling in the Biological and Health Sciences** (3 cr)

BSYSE 551 Advanced Biological Systems Engineering Topics (V 1-4 cr)

BSYSE 552 Advanced Biological Systems Engineering Topics (V 1-4 cr)

BSYSE 554 Aquatic System Restoration (3 cr)

BSYSE 555 Natural Treatment Systems (3 cr)

BSYSE 560 Aquatic Chemistry (3 cr)

BSYSE 582 Food Process Engineering I (3 cr)

CE 211 Statics (3 cr)

CE 215 Mechanics of Materials (3 cr)

CE 322 Transportation Engineering (3 cr)

CE 351 Water Resources Engineering (3 cr)

CE 400 Highway Materials Engineering (3 cr)

CE 401 Climate Change Science and Engineering (3 cr)

CE 402 Applied Meteorology (3 cr)

CE 403 Air Quality Management (3 cr)

CE 405 Decision-Making for Sustainable and Resilient Civil Infrastructure (3 cr)

CE 414 Structural Design Loads and Load Paths (3 cr)

CE 415 Environmental Measures (3 cr)

CE 416 Hydraulic Engineering Laboratory (3 cr)

CE 418 Hazardous Containment Pathway Analysis (V 3-4 cr)

CE 419 Hazardous Waste Treatment (3 cr)

CE 425 Soil and Site Improvement (3 cr)

CE 430 Analysis of Indeterminate Structures (3 cr)

CE 431 Structural Steel Design (3 cr)

CE 433 Reinforced Concrete Design (3 cr)

CE 434 Masonry Design (3 cr)

CE 435 Foundations (3 cr)

CE 436 Design of Timber Structures (3 cr)

CE 442 Water and Wastewater Treatment Design (3 cr)

CE 450 Design and Simulation of Water Resource Systems (3 cr)

CE 451 Open Channel Flow (3 cr)

CE 460 Advanced Hydrology (3 cr)

CE 472 Durable and Sustainable Pavements and Bridges (3 cr)

CE 473 Pavement Design (3 cr)

CE 475 Groundwater (3 cr)

CE 476 Pavement Evaluation and Rehabilitation (3 cr)

CE 501 Advanced Topics in Transportation Engineering (V 2-4 cr)

CE 502 Applied Meteorology (3 cr)

CE 503 Air Quality Management (3 cr)

CE 504 Sustainability Engineering I (3 cr)

CE 505 Decision-Making for Sustainable and Resilient Civil Infrastructure (3 cr)

CE 506 Theory and Measurement of Turbulent Fluxes (3 cr)

CE 507 Sustainability: Life Cycle Assessment (3 cr)

CE 508 Concrete Durability (3 cr)

CE 509 Numerical Modeling of Geomaterials (3 cr)

CE 510 Advanced Geomaterial Characterization (3 cr)

CE 511 Advanced Topics in Geotechnical Engineering (V 2-4 cr)

CE 512 Dynamics of Structures (3 cr)

CE 514 Advanced Mechanics of Materials (3 cr)

CE 515 Environmental Measures (3 cr)

CE 517 Mechanics of Sediment Transport (3 cr)

CE 518 Hazardous Containment Pathway Analysis (V 3-4 cr)

CE 519 Hazardous Waste Treatment (3 cr)

CE 524 Geotechnical Earthquake Engineering (3 cr)

CE 525 Soil and Site Improvement (3 cr)

CE 527 Engineering Properties of Soils (3 cr)

CE 530 Advanced Design of Steel Structures (3 cr)

CE 531 Probability and Statistical Models in Engineering (3 cr)

CE 532 Finite Elements (3 cr)

CE 533 Advanced Reinforced Concrete Design (3 cr)

CE 534 Prestressed Concrete and Bridge Design (3 cr)

CE 535 Advanced Finite Elements (3 cr)

CE 537 Advanced Topics in Structural Engineering (3 cr)

CE 538 Earthquake Engineering (3 cr)

CE 539 Advanced Design of Timber Structures (3 cr)

CE 540 Instrumental Analysis of Environmental Contaminants (3 cr)

CE 541 Physicochemical Water and Wastewater Treatment (3 cr)

CE 542 Biochemical Wastewater Treatment (3 cr)

CE 543 Advanced Topics in Environmental Engineering Practice (V 1-4 cr)

CE 550 Hydroclimatology (3 cr)

CE 551 Open Channel Flow (3 cr)

CE 552 Advanced Topics in Hydraulic Engineering (V 1-3 cr)

CE 555 Natural Treatment Systems (3 cr)

CE 560 Advanced Hydrology (3 cr)

CE 562 Advanced Subsurface Flow and Transport (3 cr)

CE 564 Numerical Methods (3 cr)

CE 567 Properties of Highway Pavement Materials (3 cr)

CE 572 Advanced Pavement Design and Analysis (3 cr)

CE 583 Aquatic Chemistry (3 cr)

CE 584 Environmental Microbiology (3 cr)

CE 585 Aquatic System Restoration (3 cr)

CE 586 Bioremediation of Hazardous Waste (3 cr)

CE 588 Atmospheric Turbulence and Air Pollution Modeling (3 cr)

CE 589 Atmospheric Chemical and Physical Processes (3 cr)

CE 590 Spectroscopy and Radiative Transfer of the Atmosphere (3 cr)

CE 591 Aerosol Dynamics and Chemistry (3 cr)

CE 593 Polymer Materials and Engineering (3 cr)

CE 594 Natural Fibers (3 cr)

CE 595 Polymer and Composite Processing (3 cr)

CE 596 Engineered Wood Composites (3 cr)

CE 597 Polymers and Surfaces for Adhesion (3 cr)

CE 598 Natural Fiber Polymer Composites (3 cr)

CHE 510 Transport Processes (3 cr)

CHE 527 Macroscopic Thermodynamics (3 cr)

CHE 529 Chemical Engineering Kinetics (3 cr)

CHE 541 Chemical Engineering Analysis (3 cr)

CHE 560 Biochemical Engineering (3 cr)

CHEM 503 Advanced Topics in Inorganic Chemistry (V 1-3 cr)

CHEM 537 Advanced Topics in Physical Chemistry (V 1-3 cr)

CHEM 542 Advanced Organic Chemistry (3 cr)

CHEM 544 Advanced Topics in Organic Chemistry (V 1-3 cr)

CHEM 545 Synthetic Organic Chemistry (3 cr)

CHINESE 101 First Semester (4 cr)

CHINESE 102 Second Semester (4 cr)

CHINESE 111 Asian Film (3 cr)

CHINESE 121 Modern Chinese Culture (3 cr)

CHINESE 131 Masterpieces of Asian Literature (3 cr)

CHINESE 203 Third Semester (4 cr)

CHINESE 204 Fourth Semester (4 cr)

CHINESE 305 Intermediate Conversation II (1 cr)

CHINESE 306 Intermediate Reading and Translation (3 cr)

CHINESE 308 Intermediate Grammar and Writing (3 cr)

CHINESE 320 Issues in East Asian Ethics (3 cr)

CHINESE 330 The Art of War (3 cr)

CHINESE 361 Advanced Chinese for the Professions (3 cr)

CHINESE 363 Introduction to Literary Chinese (3 cr)

CHINESE 364 Media Chinese (3 cr)

CHINESE 405 Advanced Conversation (1 cr)

CHINESE 450 Seminar in Chinese Studies - Themes (3 cr)

COUN PSY 511 Theories, Research, and Techniques in Counseling Psychology I (3 cr)

COUN PSY 512 Theories, Research, and Techniques in Counseling Psychology II (3 cr)

COUN PSY 515 Ethics and Professional Problems in Counseling Psychology (3 cr)

COUN PSY 518 Theoretical Foundations of Group Counseling (3 cr)

COUN PSY 541 Clinical and Experimental Hypnosis Seminar (3 cr)

CPT S 442 Computer Graphics (3 cr)

CPT S 464 Distributed Systems Concepts and Programming (3 cr)

CPT S 466 Embedded Systems (3 cr)

CPT S 531 Advanced Matrix Computations (3 cr)

CPT S 542 Computer Graphics (3 cr)

CPT S 564 Distributed Systems Concepts and Programming (3 cr)

CPT S 566 Embedded Systems (3 cr)

CRM J 101 Introduction to the Administration of Criminal Justice (3 cr)

CRM J 320 Criminal Law (3 cr)

CRM J 330 Crime Control Policies (3 cr)

CRM J 365 Juvenile Justice and Corrections (3 cr)

CRM J 370 Introduction to Policing in America (3 cr)

CRM J 400 Issues in the Administration of Criminal Justice (3 cr)

CRM J 405 Comparative Criminal Justice Systems (3 cr)

CRM J 420 Criminal Procedure (3 cr)

CRM J 424 Community Corrections (3 cr)

CRM J 491 Special Topics: Study Abroad (3 cr)

CRM J 505 Comparative Criminal Justice (3 cr)

CRM J 530 Criminal Justice: Process and Institutions (3 cr)

CRM J 540 Seminar in Evaluation Research (3 cr)

CRM J 541 Seminar in Corrections (3 cr)

CRM J 570 The Police and Society (3 cr)

CRM J 572 Seminar in Comparative Policing (3 cr)

CRM J 591 Seminar in the Administration of Criminal Justice (3 cr)

CROP SCI 301 Turfgrass Management (3 cr)

CROP SCI 360 World Agricultural Systems (3 cr)

CROP SCI 401 Turfgrass Science (3 cr)

CROP SCI 403 Advanced Cropping Systems (3 cr)

CROP SCI 503 Advanced Cropping Systems (3 cr)

CROP SCI 504 Plant Transmission Genetics (3 cr)

CROP SCI 505 Advanced Classical and Molecular Breeding (3 cr)

CROP SCI 555 Epigenetics in Plants (2 cr)

E E 451 Digital Communication Systems (3 cr)

E E 486 Power Electronics (3 cr)

E E 501 Linear System Theory (3 cr)

E E 502 Linear Multivariable Control (3 cr)

E E 504 Modern Optics (3 cr)

E E 505 Nonlinear System Theory (3 cr)

E E 507 Random Processes in Engineering (3 cr)

E E 508 Estimation Theory for Signal Processing, Communications, and Control (3 cr)

E E 511 Protection of Power Systems II (3 cr)

E E 518 Advanced Electromagnetic Theory I (3 cr)

E E 527 Antenna Theory and Design (3 cr)

E E 530 Digital Signal Processing II (3 cr)

E E 551 Data Communication Systems (3 cr)

E E 581 Advanced Topics in Power Systems (V 2-3 cr)

E E 582 Advanced Topics (V 1-3 cr)

E MIC 586 Special Projects in Electron Microscopy (V 2-3 cr)

E MIC 587 Special Topics in Electron Microscopy (1 cr)

ECONS 324 The Economics of Health Care (3 cr)

ECONS 424 Strategy and Game Theory (3 cr)

ECONS 525 Master's Econometrics (3 cr)

ECONS 526 Master's Microeconomic Analysis I (3 cr)

ECONS 527 Master's Microeconomic Analysis II (3 cr)

ECONS 528 Master's Macroeconomics Analysis (3 cr)

ECONS 529 Research Methods (V 1-2 cr)

ECONS 533 International Trade and Policy (3 cr)

ECONS 534 Production Economics (3 cr)

ED AD 580 School Organization and Administration (3 cr)

ED AD 585 Financial Management in Education (3 cr)

ED PSYCH 508 Educational Statistics (3 cr)

ENGLISH 443 Phonology (3 cr)

ENGLISH 543 Phonology (3 cr)

ENGLISH 546 Topics in Teaching English as a Second Language (3 cr)

ENTOM 150 Insects, Science, and World Cultures (3 cr)

ENTOM 401 Biology and Society, Past and Present (3 cr)

ENTOM 490 Special Topics in Entomology (V 1-4 cr)

ENTOM 539 Insect Identification (4 cr)

ENTOM 590 Special Topics in Entomology (V 1-4 cr)

FINE ART 381 Beginning Photography (3 cr)

FINE ART 382 Intermediate Photography (3 cr)

FINE ART 555 Critical Practices (9 cr)

FRENCH 410 French Film in Translation (3 cr)

FS 110 Introduction to Food Science (3 cr)

FS 201 Science on Your Plate (3 cr)

FS 220 Food Safety and Quality (3 cr)

FS 301 Food Mycology (3 cr)

FS 302 Food Processing Lab (1 cr)

FS 303 Food Processing (3 cr)

FS 304 Cereal Chemistry and Processing (3 cr)

FS 329 Dairy Foods Composition and Quality (4 cr)

FS 401 Topics in Food Science (V 1-3 cr)

FS 402 Industrial Fermentations (3 cr)

FS 405 Ciders and Other Fermented Foods (3 cr)

FS 406 Evaluation of Dairy Products I (1 cr)

FS 407 Evaluation of Dairy Products Lab (1 cr)

FS 409 Principles of Environmental Toxicology (3 cr)

FS 416 Food Microbiology (3 cr)

FS 417 Food Microbiology Laboratory (2 cr)

FS 418 Oral Seminar in Food Science (1 cr)

FS 422 Sensory Evaluation of Food and Wine (3 cr)

FS 423 Sensory Evaluation of Food and Wine Lab (1 cr)

FS 429 Dairy Products (3 cr)

FS 430 Dairy Products Lab (1 cr)

FS 432 Food Engineering (3 cr)

FS 433 Food Engineering Lab (1 cr)

FS 436 Principles of Sustainability (3 cr)

FS 460 Food Chemistry (3 cr)

FS 461 Food Chemistry Laboratory (1 cr)

FS 462 Food Analysis (3 cr)

FS 464 Food Toxicology (3 cr)

FS 465 Wine Microbiology and Processing (3 cr)

FS 466 Wine Microbiology and Processing Laboratory (1 cr)

FS 470 Advanced Food Technology (3 cr)

FS 475 Statistical Quality Management of Food Products (3 cr)

FS 489 Food Product Development (3 cr)

FS 495 Internship in Food Science (2 cr)

FS 496 Internship in a Winery (2 cr)

FS 499 Special Problems (V 1-4 cr)

FS 501 Topics in Food Science (V 1-3 cr)

FS 509 Principles of Environmental Toxicology (3 cr)

FS 510 Functional Foods and Health (3 cr)

FS 511 Food Lipids (3 cr)

FS 512 Food Proteins and Enzymes (2 cr)

FS 513 Food Carbohydrates (3 cr)

FS 514 Starch Chemistry (3 cr)

FS 515 Food Fermentations - Microbiology and Technology (3 cr)

FS 516 Food Laws (2 cr)

FS 517 Scientific Writing (2 cr)

FS 518 Seminar Oral (1 cr)

FS 522 Sensory Evaluation of Food and Wine (3 cr)

FS 529 Dairy Products (3 cr)

FS 530 Dairy Products Lab (1 cr)

FS 531 Advanced Food Safety and Quality (3 cr)

FS 532 Advanced Food Microbiology (3 cr)

FS 536 Principles of Sustainability (3 cr)

FS 538 Physical Properties of Foods (2 cr)

FS 564 Food Toxicology (3 cr)

FS 565 Wine Microbiology and Processing (3 cr)

FS 570 Advanced Food Technology (3 cr)

FS 583 Advances in Cereal Sciences and Technology (2 cr)

FOR LANG 100 Studies in Foreign Languages I (V 1-4 cr)

FOR LANG 200 Studies in Foreign Languages II (V 1-4 cr)

FOR LANG 300 Studies in Foreign Languages (V 1-4 cr)

FOR LANG 450 Descriptive Linguistics (3 cr)

FRENCH 310 French and Francophone Film (3 cr)

GERMAN 308 Intermediate Grammar and Writing (3 cr)

GERMAN 320 German Culture (3 cr)

GERMAN 450 Seminar in German Studies - Themes (3 cr)

GERMAN 451 Seminar in German Studies - Authors (3 cr)

H D 514 Research Methods in Human Development II (3 cr)

H D 580 Families, Community and Public Policy (3 cr)

HBM 131 Introduction to Hospitality Business Management (3 cr)

HBM 235 Travel, Society and Business (3 cr)

HBM 381 Hospitality Leadership and Organizational Behavior (3 cr)

HISTORY 308 North American Indian History, Precontact to Present (3 cr)

HISTORY 395 Topics in History (3 cr)

HISTORY 427 Public History: Theory and Methodology (3 cr)

HISTORY 525 Seminar in American History (3 cr)

HISTORY 527 Public History: Theory and Methodology (3 cr)

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HORT 313 Viticulture (3 cr)

HORT 320 Olericulture (3 cr)

HORT 321 Olericulture Laboratory (1 cr)

HORT 332 Interior Plantscaping (3 cr)

HORT 357 Greenhouse Management and Crop Production (3 cr)

HORT 358 Greenhouse Management and Crop Production Lab (1 cr)

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HORT 416 Advanced Horticultural Crop Physiology (3 cr)

HORT 418 Post-harvest Biology and Technology (3 cr)

HORT 513 Advanced Viticulture (3 cr)

HORT 516 Advanced Horticultural Crop Physiology (3 cr)

HORT 518 Post-harvest Biology and Technology (3 cr)

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HUMANITY 320 Issues in East Asian Ethics (3 cr)

ITALIAN 101 First Semester (4 cr)

ITALIAN 102 Second Semester (4 cr)

ITALIAN 105 Elementary Conversation (1 cr)

ITALIAN 205 Intermediate Conversation (1 cr)

JAPANESE 320 Issues in East Asian Ethics (3 cr)

LND ARCH 480 Professional Practice (2 cr)

LND ARCH 520 The Northern Rocky Mountain Regional Landscape (4 cr)

LND ARCH 521 Cultural Interpretation of the Regional Landscape (4 cr)

MATH 416 Numerical Simulations for Probabilistic Models (3 cr)

MATH 431 Intersections of Culture and Mathematics (3 cr)

MATH 440 Applied Mathematics I: PDEs (3 cr)

MATH 441 Applied Mathematics II: Complex Variables (3 cr)

MATH 453 Graph Theory (3 cr)

MATH 466 Optimization in Networks (3 cr)

MATH 486 Mathematical Methods in Natural Sciences (3 cr)

MATH 494 Seminar in Mathematical Biology (1 cr)

MATH 503 Complex Analysis (3 cr)

MATH 504 Measure and Integration (3 cr)

MATH 505 Abstract Algebra (3 cr)

MATH 507 Advanced Theory of Numbers (3 cr)

MATH 508 Advanced Mathematical Methods for Physics and Engineering (3 cr)

MATH 511 Advanced Linear Algebra (3 cr)

MATH 512 Ordinary Differential Equations (3 cr)

MATH 516 Numerical Simulations for Probabilistic Models (3 cr)

MATH 525 General Topology (3 cr)

MATH 531 Intersections of Culture and Mathematics (3 cr)

MATH 532 Advanced Mathematical Thinking (3 cr)

MATH 534 Theories of Learning in Mathematics (3 cr)

MATH 535 Research Paradigms in Mathematics Education (3 cr)

MATH 536 Statistical Computing (3 cr)

MATH 540 Applied Mathematics I: PDEs (3 cr)

MATH 541 Applied Mathematics II: Complex Variables (3 cr)

MATH 543 Stable Numerical Methods Using Orthogonality (3 cr)

MATH 544 Advanced Matrix Computations (3 cr)

MATH 545 Numerical Analysis of Parabolic and Hyperbolic PDEs (3 cr)

MATH 546 Numerical Analysis of Elliptic PDEs (3 cr)

MATH 553 Graph Theory (3 cr)

MATH 555 Topics in Combinatorics (3 cr)

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MATH 561 Partial Differential Equations II (3 cr)

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MATH 564 Convex and Nonlinear Optimization (3 cr)

MATH 565 Nonsmooth Analysis and Optimization with Applications (3 cr)

MATH 566 Optimization in Networks (3 cr)

MATH 567 Integer and Combinatorial Optimization (3 cr)

MATH 568 Statistical Theory I (3 cr)

MATH 569 Statistical Theory II (3 cr)

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MATH 571 Mathematical Foundations of Continuum Mechanics II (3 cr)

MATH 574 Topics in Optimization (3 cr)

MATH 575 Asset Pricing in Financial Engineering (3 cr)

MATH 576 Quantitative Risk Management (3 cr)

MATH 579 Mathematical Modeling in the Biological and Health Sciences (3 cr)

MATH 581 Topics in Mathematics (V 1-3 cr)

MATH 583 Topics in Applied Mathematics (V 1-3 cr)

MATH 586 Mathematical Methods in Natural Sciences (3 cr)

MATSE 505 Advanced Materials Science (3 cr)

MATSE 513 Crystal Plasticity (3 cr)

MATSE 516 Phase Transformations (3 cr)

MATSE 521 Statistics of Microstructures (3 cr)

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MBIOS 440 Immunology (3 cr)

MBIOS 442 General Virology (3 cr)

MBIOS 446 Epidemiology (3 cr)

MBIOS 528 Molecular and Cellular Reproduction (3 cr)

MBIOS 540 Immunology (3 cr)

MBIOS 542 General Virology (3 cr)

MBIOS 548 Selected Topics in Immunology and Virology (1 cr)

MBIOS 582 Seminar in Reproductive Biology (1 cr)

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ME 301 Fundamentals of Thermodynamics (3 cr)

ME 303 Fluid Mechanics (3 cr)

ME 304 Heat Transfer (3 cr)

ME 313 Engineering Analysis (3 cr)

ME 419 Air Conditioning (3 cr)

ME 449 Mechanical Vibration (3 cr)

ME 474 Design for Manufacture and Modern Manufacturing Strategies (3 cr)

ME 481 Control Systems (3 cr)

ME 501 Continuum Mechanics (3 cr)

ME 502 Sustainability Assessment for Engineering Design (3 cr)

ME 503 Systems Design Approaches for Sustainability (3 cr)

ME 507 Additive Manufacturing (3 cr)

ME 509 MEMS Engineering (3 cr)

ME 513 Crystal Plasticity (3 cr)

ME 514 Thermodynamics of Solids (3 cr)

ME 515 Convective Heat Transfer (3 cr)

ME 516 Conduction and Radiation Heat Transfer (3)

ME 517 Thin Films (3 cr)

ME 520 Multiscale Modeling in Thermomechanics of Materials (3 cr)

ME 521 Fundamentals of Fluids I (3 cr)

ME 526 Statistical Thermodynamics (3 cr)

ME 527 Macroscopic Thermodynamics (3 cr)

ME 530 Elasticity (3 cr)

ME 531 Theory of Plasticity (3 cr)

ME 532 Finite Elements (3 cr)

ME 534 Mechanics of Composite Materials (3 cr)

ME 537 Fracture Mechanics and Mechanisms (3 cr)

ME 540 Advanced Dynamics of Physical Systems (3 cr)

ME 556 Numerical Modeling in Fluid Mechanics (3 cr)

ME 565 Nuclear Reactor Engineering (3 cr)

ME 574 Foundations of CAD (3 cr)

ME 575 Geometric Modeling (3 cr)

ME 579 Advanced Topics in Mechanical Engineering (V 1-3)

ME 581 Control Systems (3 cr)

ME 598 Seminar (1 cr)

MGTOP 516 Time Series (3 cr)

MSE 402 Polymeric Materials (3 cr)

MSE 503 Advanced Topics in Materials Engineering (V 1-3)

MSE 505 Advanced Materials Science (3 cr)

MSE 507 Additive Manufacturing (3 cr)

MSE 508 Polymer Nanocomposites and Functionalities (3 cr)

MSE 509 MEMS Engineering (3 cr)

MSE 513 Crystal Plasticity (3 cr)

MSE 514 Thermodynamics of Solids (3 cr)

MSE 515 Electronic Properties of Materials (3 cr)

MSE 516 Phase Transformations (3 cr)

MSE 517 Thin Films (3 cr)

MSE 520 Multiscale Modeling in Thermomechanics of Materials (3 cr)

MSE 521 Statistics of Microstructures (3 cr)

MSE 523 Ceramics Processing (3 cr)

MSE 530 Elasticity (3 cr)

MSE 531 Theory of Plasticity (3 cr)

MSE 534 Mechanics of Composite Materials (3 cr)

MSE 537 Fracture Mechanics and Mechanisms (3 cr)

MSE 543 Polymer Materials and Engineering (3 cr)

MSE 544 Natural Fibers (3 cr)

MSE 545 Polymer and Composite Processing (3 cr)

MSE 546 Engineered Wood Composites (3 cr)

MSE 547 Polymers and Surfaces for Adhesion (3 cr)

MSE 548 Natural Fiber Polymer Composites (3 cr)

MSE 592 Transmission of Electron Microscopy (3 cr)

NEUROSCI 520 Fundamentals of Neuroscience (4 cr)

NEUROSCI 540 Special Topics in Integrative Neuroscience (V 1-3 cr)

NEUROSCI 541 Special Topics in Cellular and Molecular Neuroscience (V 1-3 cr)

NEUROSCI 542 Special Topics in Interdisciplinary Neuroscience (V 1-3 cr)

NEUROSCI 543 Special Topics in Behavioral/Clinical Neuroscience (V 1-3 cr)

PHIL 207 Philosophy of Religion (3 cr)

PHIL 320 History of Ancient and Medieval Philosophy (3 cr)

PHIL 321 History of Modern Philosophy (3 cr)

PHIL 322 Nineteenth-century Philosophy (3 cr)

PHIL 350 Philosophy of Science (3 cr)

PHIL 401 Advanced Formal Logic (3 cr)

PHIL 407 Seminar in Philosophy of Religion (3 cr)

PHIL 420 Contemporary Continental Philosophy (3 cr)

PHIL 421 Kant (3 cr)

PHIL 431 Aesthetics and Philosophy of Art (3 cr)

PHIL 442 Philosophy of Mind (3 cr)

PHIL 443 Philosophy of Language (3 cr)

PHIL 446 Metaphysics (3 cr)

PHIL 447 Theory of Knowledge (3 cr)

PHIL 460 Ethical Theory (3 cr)

PHIL 462 Women and Ethics (3 cr)

PHIL 470 Philosophy of Law (3 cr)

PHIL 472 Social and Political Philosophy (3 cr)

PHIL 501 Advanced Formal Logic (3 cr)

PHIL 504 Special Topics in Philosophy (3 cr)

PHIL 507 Seminar in Philosophy of Religion (3 cr)

PHIL 510 Seminar in the History of Philosophy (3 cr)

PHIL 520 Seminar in Ethical Theory (3 cr)

PHIL 522 Seminar in Metaphysics (3 cr)

PHIL 524 Seminar in Epistemology (3 cr)

PHIL 530 Bioethics (2 cr)

PHIL 532 Seminar in Business Ethics (3 cr)

PHIL 535 Advanced Biomedical Ethics (3 cr)

PHIL 543 Philosophy of Language (3 cr)

PHIL 570 Philosophy of Law (3 cr)

PHYSICS 450 Introduction to Quantum Mechanics (3 cr)

PHYSICS 463 Introduction to Solid State and Materials Physics (3 cr)

PHYSICS 521 Classical Mechanics I (3 cr)

PHYSICS 533 Thermal and Statistical Physics I (3 cr)

PHYSICS 534 Thermal and Statistical Physics II (3 cr)

PHYSICS 541 Electromagnetic Theory (3 cr)

PHYSICS 542 Electrodynamics (3 cr)

PHYSICS 550 Quantum Theory I (3 cr)

PHYSICS 551 Quantum Theory II (3 cr)

PHYSICS 552 Quantum Theory III (3 cr)

PHYSICS 561 Atomic and Molecular Physics (3 cr)

PHYSICS 563 Physics of the Solid State (3 cr)

PHYSICS 571 Methods of Theoretical Physics (3 cr)

PHYSICS 581 Advanced Topics in Physics (3 cr)

PL P 301 Food Mycology (3 cr)

PL P 403 Advanced Cropping Systems (3 cr)

PL P 503 Advanced Cropping Systems (3 cr)

PL P 511 Viruses and Virus Diseases of Plants (4 cr)

PL P 513 Plant Nematology (3 cr)

PL P 514 Phytobacteriology (3 cr)

PL P 521 General Mycology (3 cr)

PL P 526 Advanced Fungal Biology (4 cr)

PL P 535 Molecular Genetics of Plant and Pathogen Interactions (3 cr)

PL P 551 Epidemiology and Management of Plant Diseases (3 cr)

PL P 570 Techniques in Plant Pathology (3 cr)

POL S 405 Comparative Criminal Justice Systems (3 cr)

POL S 445 Public Personnel Administration (3 cr)

POL S 503 Research Methods in Political Science and Criminal Justice (3 cr)

POL S 516 Seminar on Law, Courts, and Judicial Politics (3 cr)

POL S 530 American Foreign Policy: Theories and Applications (3 cr)

POL S 531 Seminar in International Security (3 cr)

POL S 534 Seminar in Comparative Politics (3 cr)

POL S 541 Seminar in Evaluation Research (3 cr)

POL S 542 Proseminar in Administration, Justice, and Applied Policy Studies (3 cr)

PSYCH 504 History of Psychology: Theoretical and Scientific Foundations (3 cr)

PSYCH 550 Social Psychology (3 cr)

PSYCH 574 Clinical and Experimental Biopsychology (3 cr)

PSYCH 577 Behavioral Pharmacology (3 cr)

PSYCH 592 Cognition and Affective Bases of Behavior (3 cr)

RUSSIAN 101 First Semester (4 cr)

RUSSIAN 102 Second Semester (4 cr)

RUSSIAN 105 Elementary Conversation (1 cr)

RUSSIAN 203 Third Semester (4 cr)

RUSSIAN 204 Fourth Semester (4 cr)

RUSSIAN 205 Intermediate Conversation I (1 cr)

RUSSIAN 305 Intermediate Conversation II (1 cr)

RUSSIAN 321 Contemporary Russian Culture (3 cr)

RUSSIAN 361 Advanced Russian for the Professions (3 cr)

RUSSIAN 410 Russian Film (3 cr)

RUSSIAN 430 St. Petersburg (3 cr)

SOC 356 Sociology of Aging and the Life Course (3 cr)

SOC 367 Juvenile Justice and Corrections (3 cr)

SOC 517 Seminar in Contemporary Sociological Theory (3 cr)

SOC 523 Qualitative Methods Practicum (3 cr)

SOC 525 Practicum in Survey Research (3 cr)

SOC 553 Social Organization and the Family (3 cr)

SOE 310 Modeling the Environment (4 cr)

SOE 318 Wildlife Genetics (3 cr)

SOE 408 Field Geology (3 cr)

SOE 431 Wildlife Nutrition (3 cr)

SOE 444 Environmental Assessment (4 cr)

SOE 445 Hazardous Waste Management (3 cr)

SOE 470 Introduction to Economic Geology (3 cr)

SOE 475 Groundwater (3 cr)

SOE 492 Special Topics (V 1-3 cr)

SOE 510 Species Distribution Modeling (3 cr)

SOE 520 Advanced Topics in Sedimentology (3 cr)

SOE 541 Orogenic Systems (3 cr)

SOE 542 Extensional Techtonics (3 cr)

SOE 544 Environmental Assessment (4 cr)

SOE 545 Hazardous Waste Management (3 cr)

SOE 550 System Dynamics Models of Environmental Systems (3 cr)

SOE 556 Foraging Ecology of Herbivores (2 cr)

SOE 560 Advanced Igneous Petrology (3 cr)

SOE 583 Radiogenic Isotopes and Geochronology (3 cr)

SOE 584 Stable Isotope Geochemistry (3 cr)

SOE 594 Environmental and Natural Resources Issues and Ethics (3 cr)

SOIL SCI 101 Organic Gardening and Farming (3 cr)

SOIL SCI 360 World Agricultural Systems (3 cr)

SOIL SCI 414 Environmental Biophysics (2 cr)

SOIL SCI 415 Environmental Biophysics Laboratory (1 cr)

SOIL SCI 508 Environmental Spatial Statistics (3 cr)

SOIL SCI 514 Environmental Biophysics (2 cr)

SOIL SCI 521 Physical Chemistry of Soils (3 cr)

SOIL SCI 531 Soil Microbiology (3 cr)

SOIL SCI 547 Soil Fertility Management (3 cr)

STAT 360 Probability and Statistics (3 cr)

STAT 412 Statistical Methods in Research I (3 cr)

STAT 422 Sampling Methods (3 cr)

STAT 508 Environmental Spatial Statistics (3 cr)

STAT 516 Time Series (3 cr)

STAT 520 Statistical Analysis of Qualitative Data (3 cr)

STAT 522 Biostatistics and Statistical Epidemiology (3 cr)

STAT 533 Theory of Linear Models (3 cr)

STAT 535 Regression Analysis (3 cr)

STAT 536 Statistical Computing (3 cr)

STAT 544 Applied Stochastic Processes (3 cr)

STAT 548 Statistical Theory I (3 cr)

STAT 549 Statistical Theory II (3 cr)

STAT 565 Analyzing Microarray and Other Genomic Data (3 cr)

TCH LRN 520 Topics in Special Student Populations (V 1-4 cr)

VET CLIN 499 Special Problems (V 1-4 cr)

VET CLIN 587 Hospital Rotation (3 cr)

VET CLIN 592 Seminar (1 cr)

VET CLIN 600 Special Projects or Independent Study (V 1-18 cr)

VET MED 520 Veterinary Physiology 5

VET MED 526 Domestic and Exotic Animal Behavior (2 cr)

VET MED 545 General Pathology (3 cr)

VET MICR 499 Special Problems (V 1-4 cr)

VET MICR 600 Special Projects or Independent Study V 1-18

VET PH 499 Special Problems (V 1-4 cr)

VET PH 600 Special Projects or Independent Study V 1-18

VIT ENOL 113 Introduction to Vines and Wines (3 cr)

VIT ENOL 313 Viticulture (3 cr)

VIT ENOL 413 Advanced Viticulture (3 cr)

VIT ENOL 422 Sensory Evaluation of Food and Wine (3 cr)

VIT ENOL 465 Wine Microbiology and Processing (3 cr)

VIT ENOL 466 Wine Microbiology and Processing Laboratory (1 cr)

VIT ENOL 496 Internship in a Winery (2 cr)

WOMEN ST 462 Women and Ethics (3 cr)

FACULTY

C. Scott Green, President
John Wiencek, Provost and Executive Vice President
Terry Grieb, Chair of the Faculty Senate
Barbara Kirchmeier, Vice Chair of the Faculty Senate
Francesca Sammaruca, Secretary of the Faculty

Effective with the 2019-20 catalog publication, the Faculty List will not reside in the catalog and is provided on the following web page, https://www.uidaho.edu/provost/faculty/faculty-lists-citations.

EMERITI FACULTY

Effective with the 2019-20 catalog publication, the Emeriti Faculty List will not reside in the catalog and is listed on the following webpage, https://www.uidaho.edu/provost/faculty/faculty-lists-citations.

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