

general bulletin

2009-2010

UNIVERSITY
OF WYOMING

University Calendar 2009-10

2009							Fall 2009		2010											
May							August	20	Residence halls open—8:00 a.m.	January										
S	M	T	W	R	F	S		24	Classes begin; Late registration and drop/add begins	S	M	T	W	R	F	S				
					1	2		27	Last day to drop first-half block courses						1	2				
3	4	5	6	7	8	9		28	Last day to add first-half block courses	3	4	5	6	7	8	9				
10	11	12	13	14	15	16	September	2	Last day to drop or change sections in semester courses - strictly enforced	10	11	12	13	14	15	16				
17	18	19	20	21	22	23		4	Last day to add, late register or change grading options in semester courses; last day to make changes to health insurance selection	17	18	19	20	21	22	23				
24	25	26	27	28	29	30		7	Labor Day (offices closed, classes excused)	24	25	26	27	28	29	30				
31								29	Last day to withdraw from first-half block courses	31										
June							October	16	Midsemester	February										
	1	2	3	4	5	6		21	Midterm grades must be submitted online by noon		1	2	3	4	5	6				
7	8	9	10	11	12	13		22	Last day to drop second-half block courses	7	8	9	10	11	12	13				
14	15	16	17	18	19	20		23	Last day to add second-half block courses	14	15	16	17	18	19	20				
21	22	23	24	25	26	27	November	26-30	Advising week for spring 2010	21	22	23	24	25	26	27				
28	29	30						30	Last day to withdraw from individual semester courses	28										
July								2	Registration for spring 2010 begins	March										
			1	2	3	4		15	Last day to withdraw from second-half block courses		1	2	3	4	5	6				
5	6	7	8	9	10	11		24	Last day to withdraw from the university for fall 2009	7	8	9	10	11	12	13				
12	13	14	15	16	17	18	December	25-27	Thanksgiving holiday (classes excused)	14	15	16	17	18	19	20				
19	20	21	22	23	24	25		4	Last day of classes	21	22	23	24	25	26	27				
26	27	28	29	30	31			7-11	Finals Week	28	29	30	31							
August								11	Residence halls close—8:00 p.m.	April										
						1	Spring 2010	17	Final grades must be submitted online by noon				1	2	3					
2	3	4	5	6	7	8	January	8	Residence halls open - 8:00 a.m.	4	5	6	7	8	9	10				
9	10	11	12	13	14	15		11	Classes begin; late registration and drop/add begin	11	12	13	14	15	16	17				
16	17	18	19	20	21	22		14	Last day to drop for first-half block courses	18	19	20	21	22	23	24				
23	24	25	26	27	28	29		15	Tuition/Fees due, strictly enforced (see page 23)	25	26	27	28	29	30					
30	31							15	Last day to add first-half block courses	May										
September								18	Martin Luther King Jr./Wyoming Equality Day (offices closed, classes excused)							1				
	1	2	3	4	5			21	Last day to drop or change sections in semester courses (strictly enforced)	2	3	4	5	6	7	8				
6	7	8	9	10	11	12		25	Last day add, late register, or change grading options in semester courses; last day to make changes to health insurance selection	9	10	11	12	13	14	15				
13	14	15	16	17	18	19	February	1	Registration for Summer 2010 main campus courses begins	16	17	18	19	20	21	22				
20	21	22	23	24	25	26		9	Last day to withdraw from first-half block courses	23	24	25	26	27	28	29				
27	28	29	30				March	15-19	Spring break	30	31									
October								22-26	Advising week for fall 2010	June										
			1	2	3			26	Last day to withdraw from individual courses				1	2	3	4	5			
4	5	6	7	8	9	10		29	Registration for fall 2010 begins	6	7	8	9	10	11	12				
11	12	13	14	15	16	17	April	2-4	Easter Break (classes excused)	13	14	15	16	17	18	19				
18	19	20	21	22	23	27		16	Last day to withdraw from second-half block courses	20	21	22	23	24	25	26				
25	26	27	28	29	30	31		23	Last day to withdraw from the university for spring 2010	27	28	29	30							
November								30	Last day of classes	July										
	1	2	3	4	5	6	7		3-7	Finals Week					1	2	3			
8	9	10	11	12	13	14	May	7	Residence halls close—6:00 p.m.	4	5	6	7	8	9	10				
15	16	17	18	19	20	21		8	Commencement	11	12	13	14	15	16	17				
22	23	24	25	26	27	28		13	Final grades must be submitted online by noon	18	19	20	21	22	23	24				
29	30						Notes:			25	26	27	28	29	30	31				
December										August										
			1	2	3	4	5							1	2	3	4	5	6	7
6	7	8	9	10	11	12				8	9	10	11	12	13	14				
13	14	15	16	17	18	19				15	16	17	18	19	20	21				
20	21	22	23	24	25	26				22	23	24	25	26	27	28				
27	28	29	30	31						29	30	31								

- (1) Refer to the *Class Schedule* for information on registration.
- (2) Subject to change on not less than 30 days' notice unless an actual emergency arises, in which event the administration may exercise its option to make any change without notice.

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University Bulletins Available

General Bulletin—Admissions Office, Dept. 3435—(800) 342-5996
Graduate Bulletin—Graduate School, Dept. 3108—(307) 766-2287
Law School Bulletin—College of Law, Dept. 3035—(307) 766-6416
Summer Bulletin—Office of the Registrar, Dept. 3964—(307) 766-5272
(All addresses: 1000 E. University Avenue, Laramie, WY 82071)

University of Wyoming World-Wide Web address: www.uwyo.edu

The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated.

The University of Wyoming is an affirmative action/equal opportunity employer and institution and does not discriminate on the basis of race, sex, creed, color, age, national origin, individual handicap, or veteran status in any aspect of employment or services. The institution's educational programs, activities, and services offered to students and/or employees are administered on a nondiscriminatory basis subject to the provisions of all civil rights laws and statutes. Evidence of practices that are not consistent with this policy should be reported to the Employment Practices Officer, 766-3459.

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Administration

The Trustees of the University of Wyoming Officers

Chuck Brown President
 Jim D. Nieman Vice President
 Warren A. Lauer Secretary
 Dave Bostrom Treasurer
 *New Officers to be elected May 2009

Members

Term		Year
Appointed		Expires
1997	Thomas E. Spicer, M.D., Rock Springs	2009
1999	Taylor H. Haynes, M.D., Cheyenne	2011
2001	Jim D. Neiman, Hulett	2013
2002	James Trosper, Fort Washakie	2013
2003	Richard M. "Dick" Davis, Sheridan	2009
2003	Howard Willson, M.D., Thermopolis	2009
2005	C.H. "Chuck" Brown, Wheatland	2011
2005	Warren A. Lauer, Laramie	2011
2005	David F. "Dave" Palmerlee, Buffalo	2011
2007	David J. Bostrom, Worland	2013
2007	Betty Fear, Big Piney	2009
2007	Ann M. Rochelle, Casper	2013

Ex Officio

Dave Freudenthal, Governor of Wyoming Ex Officio
 Jim McBride, State Superintendent of Public Instruction
 Ex Officio
 Tom Buchanan, President of the University of Wyoming Ex Officio
 Kelsey Day, President of the Associated Students
 of the University of Wyoming Ex Officio

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 Rollin H. Abernethy Associate Provost
 Nicole S. Ballenger Associate Provost
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 Vacant Vice President for Administration
 Mark Collins Associate Vice President for Administration
 - Operations Administration
 Janet Lowe Associate Vice President for Administration
 - Fiscal Administration
 Rick Miller Vice President for Governmental,
 Community, and Legal Affairs
 Nell Russell Associate Vice President for Diversity
 Robert Aylward Vice President for Information Technology and CIO
 Ben Blalock Vice President for Institutional Advancement
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 William Gern Vice President for Research and
 Economic Development
 Carol Frost Associate Vice President for Research and
 Economic Development
 Dorothy Yates Associate Vice President for Research and
 Economic Development
 Sara Axelson Vice President for Student Affairs
 David Cozzens Associate Vice President for Student Affairs
 and Dean of Students
 Thomas K. Burman Director, Intercollegiate Athletics

Administrative Officers

Finance:

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 Troy Lane Chief, Campus Police
 Roger J. Baalman Director, Facilities Planning
 Vacant Director, Human Resources
 Connie Brizuela Director, Institutional Analysis
 James Scott Director, Physical Plant
 Vacant University Budget Officer

Student Affairs:

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 Robbie Darnall Director, Alumni Relations
 Patrick Moran Director, Campus Recreation
 Jo Chytka Director, Center for Advising and Career Services
 Eric Webb Director, Dining Services
 Tammy Aagard Registrar, Office of the Registrar
 Beth McCuskey Executive Director of Residence Life and Dining
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 David Cozzens Associate Vice President for Student Affairs
 and Dean of Students
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 Joanne Steane, M.D. Director, Student Health Services
 Daniel Socall Director, University Counseling Center
 Darcy DeTienne Director, Wyoming Union

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James Wangberg Associate Dean and
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 Glen D. Whipple Associate Dean and
 Director, Cooperative Extension Service
 Stephen D. Miller Associate Dean and
 Director, Wyoming Agricultural Experiment Station
 Roger A. Coupal Head, Agricultural and Applied Economics
 Doug Hixon Head, Animal Science
 Karen C. Williams Head, Family and Consumer Sciences
 Ken Mills Director, Microbiology Program
 Mark M. Stayton Chair, Molecular Biology
 Stephen Herbert Head, Plant Sciences
 Vacant Head, Renewable Resources
 Donald L. Montgomery Head, Veterinary Sciences and
 Director, Wyoming State Veterinary Laboratory

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Gregory K. Brown Associate Dean
 Audrey Shalinsky Associate Dean
 Gracie Lawson-Borders Director, African American Studies
 Judith A. Antell Director, American Indian Studies
 Eric J. Sandeen Director, American Studies Program
 Michael E. Harkin Head, Anthropology
 Ricki Klages Head, Art
 Mark E. Lyford Director, Life Sciences Program
 Steven L. Miller Head, Botany
 Edward Clennan Head, Chemistry
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 Arthur Snoke Head, Geology and Geophysics
 Michael Brose Interim Chair, History
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 Edward D. Sherline Head, Philosophy
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 Jim King Head, Political Science
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 Michael Brose Director, Religious Studies Program
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 Richard Anderson-Sprecher Head, Statistics
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 Robert W. Godby Chairman, Economics and Finance
 John Jackson Chairman, Management and Marketing
 Stuart Webster Director, M.B.A. Program

Kay A. Persichitte Dean, College of Education

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 John Cochenour Head, Department of Adult Learning
 and Technology
 Mary Alice Bruce Head, Department of Counselor Education
 Alan R. Buss Head, Department of Elementary/Early
 Childhood Education
 Suzanne Young Head, Department of Educational Leadership
 Allen W. Trent Head, Department of Educational Studies
 Linda Hutchinson Head, Department of Secondary Education
 Martin Agran Head, Department of Special Education
 Audrey M. Kleinsasser Director, Wyoming
 School-University Partnership
 Robert L. Mayes Director, Science and Mathematics Teaching Center
 Margaret Hudson Principal, UW Lab School
 Judy Ellsworth Interim Director, Office of Teacher Education

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 Vacant Head, Chemical and Petroleum Engineering
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 David L. Jones Associate Dean for Academic Affairs
 June Ren Associate Dean for Research
 D. Paul Thomas Associate Dean for Planning and Development
 John Vandel Dean, School of Pharmacy
 Teresa Ukrainetz Director, Division of
 Communication Disorders
 Mark Byra Director, Division of Kinesiology and Health
 Mona Schatz Director, Division of Social Work
 W.G. Saunders Director, Medical Education
 Stephan Trent, D.O. Director, UW Family Practice Residency
 Program at Casper
 James F. Broomfield, M.D. Director, UW Family Practice Residency
 Program at Cheyenne
 Keith Miller Executive Director, Wyoming
 INstitute for Disabilities (WIND)
 Matthew McEchron Director, WWAMI Medical Education Program
 Rex Gantenbein Director, Center for Rural Health
 Research and Education

Vacant Dean, College of Law

Mary D. Pridgen Associate Dean
 Denise Burke Assistant Dean of Law Admissions

Other Academic Officers

Don Roth **Dean, Graduate School**

Maggi Murdock **Associate Provost and
Dean, Outreach School**

Brent Pickett Associate Dean and Director UW/CC Center

Robert Seville Associate Dean

**Academic Coordinators
Outreach School**

Jeanie Martinez Cheyenne

Janet Bass Torrington

Amy McClure Riverton, Jackson

Vacant Powell, Cody

John A. Tollakson Gillette, Sheridan

Troy Archuleta Rock Springs, Rawlins

Maggie Farrell **Dean, University Libraries**

Lori Phillips Associate Dean, University Libraries

Ingrid "Indy" C. Burke Director, William D. Ruckelshaus Institute
and the Helga Otto Haub School of
Environment and Natural Resources

Mark A. Northam Director, School of Energy Resources

Michael J. Nutter, Lt. Col. Head, U.S. Air Force ROTC

Brenton E. Reinhardt, Lt. Col. Head, U.S. Army ROTC

Duncan S. Harris Director, Honors Program

Jane Nelson Director, John P. Ellbogen Center for
Teaching and Learning

Anne Alexander Director, International Programs

James Steidtmann Director, Institute for Energy Research and
Director, Enhanced Oil Recovery Institute

Mark A. Greene Director, American Heritage Center

Susan B. Moldenhauer Director, Art Museum

For a complete list of all faculty and staff and their contact information,
please see the *UW Campus Directory* or the UW Web site at *www.uwyo.edu*.

Mission Statement

The University of Wyoming aspires to be one of the nation's finest public land-grant research universities. We serve as a statewide resource for accessible and affordable higher education of the highest quality; rigorous scholarship; technology transfer; economic and community development; and responsible stewardship of our cultural, historical, and natural resources.

In the exercise of our primary mission to promote learning, we seek to provide academic and co-curricular opportunities that will:

- Expose students to the frontiers of scholarship and creative activity and the complexities of an interdependent world;
- Ensure individual interactions among students, faculty, and staff;
- Nurture an environment that values and manifests diversity, free expression, academic freedom, personal integrity, and mutual respect; and

- Promote opportunities for personal growth, physical health, athletic competition, and leadership development for all members of the university community.

As Wyoming's only university, we are committed to outreach and service that extend our human talent and technological capacity to serve the people in our communities, our state, the nation, and the world.

The primary vehicles for identifying the specific actions and resource allocations needed to accomplish this complex mission are the university's strategic plans, revised periodically.

Statement on Discrimination and Harassment

A Campus environment characterized by diversity, free inquiry, free expression and balanced by interpersonal civility has always been, and continues to be, a top priority of the University of Wyoming. Civil discourse is an essential aspect of the search for and transmission of knowledge. Words and actions that promote and encourage self-worth, respect, and dignity are consistent with the university's mission. Conversely, words or actions that reflect prejudice, stereotypes and discrimination are antithetical to the mission of the university and can not be countenanced. Specifically, racist and other discriminatory or harassing conduct based on gender,

color, disability, sexual orientation, religious preference, national origin, ancestry, or age impair and disrupt legitimate university functions. Every effort, within the context and protection of First Amendment rights, will be expended to eliminate such conduct from the campus community. Teaching our students to live productively in a multicultural/multiethnic society is a process that must take place within a constructive and harmonious multicultural/ethnic environment here at the University of Wyoming. It is the obligation of the faculty, staff, students and the administration of the University of Wyoming to provide this environment.

University Communication Statement

The University of Wyoming assigned email account shall be one of the official means of communication with all students, faculty, and staff. All community members are responsible for all information sent to them via their University assigned email account. Members who choose to manually forward mail from their University email accounts are responsible for ensuring that all information, including attachments, is transmitted in its entirety to the preferred account.

All faculty, staff, and students are required to maintain an @uwo.edu computer account. This account provides both an online identification key and a University official email address. The University sends much of its

correspondence solely through email. This includes, but is not limited to, policy announcements, emergency notices, meeting and event notifications, course syllabi and requirements, and correspondence between faculty, staff, and students. Such correspondence is mailed only to the University official email address.

Faculty, staff, and students are expected to check their email on a frequent and consistent basis in order to stay current with University-related communications.

Faculty, staff, and students have the responsibility to recognize that certain communications may be time-critical.

University Accreditation/Membership

The University of Wyoming, and all UW academic programs are accredited by The Higher Learning Commission, a commission of the North Central Association of Colleges and Schools Commission on Institutions of Higher Education, 30 North LaSalle Street, Suite 2400, Chicago, IL 60602-2504, (312) 263-0456 or (800) 621-7440.

In addition, many individual academic programs are either approved, accredited or hold membership as indicated below.

Recognized or accredited by:

- Accreditation Board for Engineering and Technology
- Accreditation Council for Graduate Medical Education
- Accreditation for Pharmacy Education
- American Association of Museums
- American Association of Vet Lab Diagnosticians
- American Bar Association
- American Chemical Society
- American Dental Association
- American Psychological Association
- American Speech-Language-Hearing Association
- Association of American Law Schools
- Association to Advance Collegiate Schools of Business - International
- Commission on Accreditation for Dietetics Education
- Commission on Accreditation of Athletic Training
- Commission on Collegiate Nursing Education
- Computer Science Accreditation Commission (a participating body of ABET)
- Council for Accreditation of Counseling and Related Educational Programs
- Council on Social Work Education
- National Association of Schools of Music
- National Council for Accreditation of Teacher Education
- Newberry Consortium for American Indian Studies
- Society for Range Management
- Wyoming Professional Teaching Standards Board

Holds membership in:

- American Association of Colleges of Teacher Education
- American Association of University Women
- American Council on Education
- American Society for Engineering Education
- Association for the Advancement of International Education
- Association of Academic Survey Research Organizations
- Association of American Colleges and Universities
- Council for the Advancement and Support of Education
- Council of Academic Deans from Research Education Institutions
- Council of Colleges of Arts and Sciences
- Council of Graduate Schools
- Justice Research and Statistics Association
- National Association of State Universities and Land Grant Colleges
- National Network for Educational Renewal
- University Continuing Education Association
- Western Cooperative for Educational Technology
- Western Interstate Commission for Higher Education

Institution Articulation Agreements:

- NOLS - National Outdoor Leadership School
- Pikes Peak Community College, Colorado Community College Commission
- Teton Science School
- Wyoming Community Colleges

Memberships are also held in various discipline-related organizations. For more information, contact the appropriate department.

For information regarding accreditation/membership, contact the Office of Academic Affairs.

The University of Wyoming is a member of, and active participant in, the National Commission on Accrediting, an organization which endeavors to coordinate all accrediting activities.

Assessment of Student Learning at the University of Wyoming

The University of Wyoming is committed to providing students with high quality academic programs and services. As a result, UW is actively engaged in several processes to assess student learning with the ultimate goal of continuous improvement. A university wide assessment plan and individual department plans have been developed and are in various stages of implementation. The purpose of these plans is to identify and articulate student learning outcomes – the skills, abilities, and knowledge that students are expected to acquire by the completion of their programs – and the means by which these outcomes would be measured. Learning is assessed at the university, college and departmental levels. Current assessment activities include, but are not limited to, surveys, interviews, portfolios, exams and

senior capstone projects. In order for UW's assessment efforts to be successful, students must become engaged in the process. As such, students will be asked and/or required to complete various assessments as determined by the university or department prior to the awarding of degrees.

For more information regarding the student learning outcomes for a particular program of study, see the section on College and Division Programs. For further information about the University of Wyoming's assessment of student learning efforts, see the Assessment of Student Learning Web page at www.uwyo.edu/AcadAffairs/assessment.

FERPA

Family Educational Rights and Privacy Act (PL-380)

General Statement

The University of Wyoming has the responsibility for effectively supervising any access to and/or release of official data/information related to the educational records of its students. Certain items of information about individual students are fundamental to the educational process and must be recorded. This recorded information concerning students must be used only for clearly-defined purposes, must be safeguarded and controlled to avoid violations of personal privacy, and must be appropriately disposed of when the justification for its collection and retention no longer exists.

In this regard, the university is committed to protecting, to the maximum extent possible, the right of privacy of all individuals about whom it holds information, records, and files. Access to, and release of, such records is restricted to the student concerned, to parents of dependent students, to others with the student's written consent, to officials within the university, to a court of competent jurisdiction, and otherwise pursuant to law.

Access

All official information collected and maintained in the university identifiable with an individual student will be made available for inspection and review at the written request of that student subject to certain exceptions.

For purposes of access to records at the University of Wyoming, students enrolled (or formerly enrolled) for academic credit or audit at the university shall have access to official records concerning themselves.

A request for general access to all official records, files, and data maintained by the university must be made in writing to the registrar or to other person(s) as designated by the university officer in charge of the unit maintaining records. A request for access to official data maintained in a particular office may be made to the administrative head of the office.

When students (or former students) appear at a given office and request access to the university record about themselves:

1. The student must provide proper identification verifying that he or she is the person whose record is being accessed.
2. The designated staff person(s) must supervise the review of the contents of the record with the student.
3. Inspection and review shall be permitted within a period not to exceed 45 days from the date of the student's request.
4. Students will be free to make notes concerning the contents, but no material will be removed from the record at the time.

Recordkeeping personnel and members of the faculty and staff with administrative assignment may have access to records and files for internal educational purposes as well as for routine necessary clerical, administrative, and statistical purposes as required by the duties of their jobs. The name and position of the official responsible for the maintenance of each type of educational record may be obtained from the registrar of the university.

Any other access allowed by law must be recorded showing the legitimate educational or other purpose and the signature of the person gaining access. The student concerned shall be entitled to review this information.

Release of Information

No personally identifiable information shall be disclosed to any individual (including parents, spouse, or other students) or organization except as follows:

1. Disclosure is authorized in writing by the student.

2. Disclosure is to university officers or employees who need to know so as to accomplish legitimate university purposes related to their functions.
3. Disclosure is to a governmental agency, educational organization, parent of a dependent student, or other entity as described by federal regulations or otherwise required by state or federal law. Custodians of records should obtain interpretations whenever third parties request personally identifiable information.
4. When disclosure of any personally identifiable data/information from university records about a student is demanded pursuant to court order or lawfully issued subpoena, the staff member receiving such order shall, if possible, immediately notify the student concerned in writing prior to compliance with such order or subpoena. (NOTE: In fulfillment of its responsibilities to monitor certain state benefit and entitlement programs, the Wyoming state auditor may issue to the university from time to time an administrative subpoena for a listing of currently enrolled full-time students, the students' social security numbers, and information relating to the nature and amount of any educational financial aid being received by such students. Upon being served with such a subpoena, the university will provide the information requested without further notice.)
5. Data/information from university records about students will be released for approved research purposes only if the identity of the student involved is fully protected, or if the research is related to official university business and not publicly disseminated.
6. Information from university records may be released to appropriate persons in connection with an emergency if the knowledge of such information is necessary to protect the health or safety of a student or other persons.

The university officer responsible for the records from which information is released shall maintain with the student's record a listing of disclosures of personally identifiable information, except disclosures in accordance with items 1 and 2 above for which no record need be kept. The listing shall identify the parties who requested or obtained information and the legitimate interests these parties had in making the request.

Public or Directory Information

The following items are considered public data/information and may be disclosed by the university in response to inquiries concerning individual students, whether the inquiries are in person, in writing, or over the telephone:

1. Name;
2. Affirmation of whether currently enrolled;
3. Campus location.

Unless students have officially filed a written request with the university registrar within ten working days after the first day of classes for a semester that disclosure not be made without their written permission, the following items, in addition to those above, are considered public/directory information; may be included in appropriate university/campus directories and publications; and may be disclosed by designated staff members in response to inquiries concerning individual students, whether the inquiries are in person, in writing, or over the telephone:

1. School, college, department, major, or division;
2. Dates of enrollment;
3. Degrees received;
4. Honors received;
5. Local address and phone number;
6. Home address (permanent);

7. Email address;
8. Participation in officially recognized activities and sports;
9. Weight and height of members of athletic teams;
10. Full-time or part-time enrollment.

Letters of Appraisal/Recommendation

Candid appraisals and evaluations of performance and potential are an essential part of the educational process. Clearly, the providing of such information to prospective employers, to other educational institutions, or to other legitimately concerned outside individuals and agencies is necessary and in the interest of the particular student.

Data/information which was part of university records prior to January 1, 1975 and which was collected and maintained as confidential information will not be disclosed to students. Should a student desire access to a confidential letter of appraisal received prior to January 1, 1975, the student shall be advised to have the writer of that appraisal notify, in writing, the concerned records custodian of the decision as to whether or not the writer is willing to have the appraisal made available for the student's review. Unless a written response is received approving a change of status in the letter, the treatment of the letter as a confidential document shall continue.

Documents of appraisal relating to students and collected by the university or any department or office of the university on or after January 1, 1975, will be maintained confidentially only if a waiver of the right of access has been executed by the student. In the absence of such a waiver, all such documents will be available for the student's inspection and review.

If a student files a written waiver with the department or office concerned, letters of appraisal received pursuant to that waiver will be maintained confidentially. Forms will be available for this purpose.

Challenges to the Record

All students shall have the opportunity to challenge any item in their file which they consider to be inaccurate, misleading, or otherwise inappropriate. A student shall initiate a challenge by submitting a request in writing for the deletion or correction of the particular item. The request shall be made to the custodian of the particular record in question.

If the custodian and the student involved are unable to resolve the matter to the satisfaction of both parties, the written request for deletion or correction shall be submitted by the student to such person as designated by the president of the university who shall serve as the hearing officer. The student shall be given the opportunity for a hearing at which the student may present oral or written justification for the request for deletion or correction. The hearing officer may obtain such other information as he or she deems appropriate for use in the hearing and shall give the student a written decision on the matter within 30 days from the conclusion of the hearing. If the decision of the hearing officer is to deny the deletion or correction of an item in the student's file, the student shall be entitled to submit a written statement presenting the student's position with regard to the item to the hearing officer. Both the written decision of the hearing officer and the statement submitted by the student shall be inserted in the student's file. The decision of the hearing officer shall be final.

Grades may be challenged under this procedure only on the basis of the accuracy of their transcription or posting.

Exception to the Policy

It is the position of the university that certain data/information maintained in various offices of the university is not subject to the provisions of this policy with regard to inspection, review, challenge, correction, or deletion. Exceptions to "educational records" include: alumni records, employment records, law enforcement records, medical records, sole possession records, and university disciplinary records.

1. Statements submitted by parent(s)/guardian or spouse in support of financial aid or residency determinations are considered to be confidential between those persons and the university and are not subject to the provisions of this policy except with the written consent of the persons involved. Such documents are not regarded as part of the student's official record.
2. University employment records of students are not included in this policy, except as provided under the Wyoming Public Records Act.
3. With regard to general health data, only that data/information which is used by the university in making a decision regarding the student's status is subject to review by the student under this policy. Written psychiatric or psychological case notes which form the basis for diagnoses, recommendations, or treatment plans remain privileged information not accessible to the student. Such case notes are not considered to be part of official university records. To ensure the availability of correct and helpful interpretations of any psychological test scores, notes, or other evaluative or medical materials, the contents of these files for an individual student may be reviewed by that student only in consultation with a professional staff member of the specific department involved. Records that are subject to FERPA are not subject to the HIPAA Privacy Rule.
4. Records relating to a continuing or active criminal investigation by the University of Wyoming Police Department, or records of said office not relating to the student's status with the university, are not subject to this policy.
5. No student is entitled to see information or records that pertain to another student, to parents, or to other third parties. A student is entitled to review only that portion of an official record or file that pertains to him or her.
6. The personal files, or sole possession records, of members of the faculty and staff which concern students, including private correspondence, and notes which refer to students, are not regarded as official records of the university. This includes notes intended for the personal use of the faculty and never intended to be official records of the university. In order to be sole possession records, they cannot be shared with anyone else.

Rights of Students

Students are hereby notified that controlling provisions of federal law are contained in Sec. 438, Pub. L.90-247, Title IV, as amended, 88 Stat. 571-574 (U.S.C. 1232g) and regulations set forth in the code of Federal Regulations, 34 C.F.R. sections 99.1 to 99.67 (1981). Complaints of institutional noncompliance may be made to the Department of Education as provided in the regulations.

Honor Societies and Programs

All Academic Disciplines

Phi Beta Kappa has been one of the most respected societies in the world for more than 200 years. Phi Beta Kappa was founded in 1776 at the College of William and Mary, Virginia. Within a decade, chapters arose at Yale, Harvard, and Dartmouth. The Wyoming chapter received its charter in 1940, and today fewer than 270 colleges and universities in the United States meet the strict qualifications for housing a chapter. UW faculty and administrators annually elect to membership fewer than one-tenth of the leading scholars of the senior class, candidates for the degrees of Bachelor of Arts and Bachelor of Science. In exceptional cases a junior may be elected. In addition to having a distinguished academic record, a student eligible for Phi Beta Kappa must pursue a balanced and broad course of study, which would include a foreign language as well as courses in math, the sciences, and the humanities. At least 90 hours of the student's course work must be in the liberal arts and sciences. Students are reviewed for eligibility and are notified by mail the spring of their election. Phi Beta Kappa promotes the ideal of a community of scholarship, and every year the Chapter sponsors an eminent visiting lecturer for the entire university.

The national honor society of Phi Kappa Phi, founded in 1897, recognizes and encourages superior scholarship in all curricula of the colleges and divisions of the university. No other honor society has higher academic standards for admission. Good character is also an essential supporting attribute for those scholars elected to membership. The University of Wyoming chapter of Phi Kappa Phi sets minimum cumulative grade point requirements at 3.5 for seniors, 3.8 for juniors and 3.9 for graduate students. In addition, there are minimum requirements in terms of hours completed at UW. Since the chapter may initiate no more than ten percent of the number of seniors in each college, the actual grade point cutoff is often higher than these minimums. In the spring of each year, students' records are reviewed and letters of invitation are sent to those eligible for election to the society. Supplementing the work of its chapter, the national society awards fellowships for graduate study.

College of Agriculture

Agriculture majors - *Alpha Zeta* is a national honorary for students in agriculture who demonstrate academic excellence, character and leadership. Applications for membership are sent to eligible students. *Gamma Sigma Delta* is a national honor society open to students in agriculture. Potential members are invited to membership based upon academic excellence. *Phi Upsilon Omicron* is a national honor society in family and consumer sciences. Potential members are invited to membership based on academic excellence and leadership.

College of Arts and Sciences

Art - A *Bachelor of Fine Arts* in art is considered honorary.

Botany - This *Honors Program* is for students majoring in botany or biology with strong interests in botanical science and independent research. Application to the botany department may be made after completion of the sophomore year with a cumulative grade point average of 3.3.

Chemistry - *American Chemical Society*

Communication - *Lambda Pi Eta*

Criminal Justice - *Alpha Phi Sigma* - *Epsilon Omega Chapter*, criminal justice honorary.

English - *English Honors Program* enables junior and senior English majors who carry a grade point average of 3.5 or better in their English courses to intensify and enhance their studies by working closely with a supervising faculty member to develop a senior honors project, a major piece of writing on a literary topic. *Sigma Tau Delta* - *Alpha Mu Omicron Chapter*, international English honor society.

Geography - *Gamma Theta Upsilon* - *Eta Eta Chapter* candidates must have completed three semesters of college coursework and three courses in Geography, with a grade point average of 3.0 or higher for these courses. Contact department for more information.

Geology - Eligible students are Bachelor of Science degree holders with honors, majoring in geology or geophysics. They must meet an overall grade point average of 3.2, a grade point average of 3.2 in the major, and successful completion of an independent research project. Contact department for details.

History - *Phi Alpha Theta*

International Studies - *Sigma Iota Rho*, national honorary

Journalism - *Society of Professional Journalists*, *Sigma Delta Chi*

Languages - *Alpha of Wyoming Chapter of Sigma Delta Pi*

Music - *Presser Award* is conferred by vote of the department faculty for outstanding senior in music. *Pi Kappa Lambda*, selected by faculty on the basis of outstanding scholarship and musical accomplishments.

Physics and Astronomy - *Sigma Pi Sigma*

Political Science - *Pi Sigma Alpha*, *Epsilon Beta Chapter*. *Pi Alpha Alpha*, national public administration honorary.

Psychology - *Psi Chi*

Sociology - *Alpha Kappa Delta*, the international honorary society for sociology. In addition, sociology majors with a 3.2 overall GPA, a 3.5 GPA in sociology courses and two 5000-level sociology classes graduate with honors in sociology.

Women's Studies - National Women's Studies Association

College of Business

Accounting - *Beta Alpha Psi*, *Delta Alpha Chapter*, is the UW chapter of the national accounting honorary. Membership in this very active student honorary is awarded only to the very best accounting students.

Business Administration - *Beta Gamma Sigma* is the national scholastic honor society. It is the arm of the accrediting group, AACSB International. Membership is very selective and based on class rank and grade point average.

College of Education

Kappa Delta Pi - Alpha Mu Chapter is the university chapter of the international honor society in education. The purpose of the society is to promote excellence in and recognize outstanding contributions to education. Invitation for membership is extended to those persons who exhibit commendable professional qualities, worthy educational ideals and sound scholarship.

Mu Na Tau Chapter of Chi Sigma Iota, international honor society for students, professional counselors and counselor educators.

College of Engineering and Applied Science

Engineering majors - Tau Beta Pi is a national honor society for all engineering majors. The purposes of the society are to honor outstanding student scholarship and to provide a spirit of liberal culture in the College of Engineering. Membership is offered to outstanding junior, senior and graduate engineering students of high scholastic ability and exemplary character.

College of Health Sciences

Nursing - Sigma Theta Tau

Pharmacy - Rho Chi Society, Academic Honorary; *Phi Lambda Sigma*, Pharmacy Leadership Society

Social Work - Phi Alpha

Alpha Epsilon Delta - Preprofessional honorary for those interested in health care careers.

University Honors Program

The National Collegiate Honors Council and *The Western Regional Honors Council* provide recognition for students, faculty, and administrators in the area of academic achievement, civic responsibility, and personal development.

College of Law

Law majors - *Order of the Coif* is an honorary society which recognizes legal scholastic excellence. Each year, the chapter may initiate into membership those students who graduate in the highest ten percent of their class.

Outreach

University of Wyoming/Casper College Center - *The Round Table Honor Society* - Open to UW/CC undergraduate students in all colleges with a 3.3 or higher GPA. Recognizes scholastic achievement and provides an opportunity for the development of leadership and service.

Academic Majors

The university confers bachelor's degrees for completion of academic disciplines established by the faculties of the colleges of Agriculture, Arts and Sciences, Business, Education, Engineering, and Health Sciences. Within each college, faculty expertise is concentrated in schools, departments, divisions, and programs to provide relevant advice, instruction, service, and research. College and department faculty administer the various major disciplines of study in subject areas selected by the students (including, when authorized, multi-college majors). Majors approved by the Trustees are listed below.

Minimum requirements for earning credits or a degree in any established major are fixed in advance and kept current by the faculty of the responsible units. Most established majors allow the students considerable latitude to attain individual goals. Selection of a major enables the student to study a body of knowledge in depth and concentrate on subjects of particular interest. A student may simultaneously earn credits in two majors, if approved by the respective departments.

If a student is not ready to declare a major concentration, an "undeclared" classification is available in each of the colleges. If the student is not ready to declare a college, a classification of "undeclared college and undeclared major" is available. The "undeclared" status is intended to be temporary for purposes of career exploration. Students are advised to declare and concentrate upon a major discipline as soon as possible.

A student who wishes to concurrently pursue a degree in more than one major must have advance approval of the involved college advisers and deans. Requirements for each of the majors must be fulfilled and credits in each must be applied to the same level of degree (i.e. bachelor's, master's, or doctoral). Students should consult with responsible faculty advisers in each major being attempted. Please refer to the section on concurrent majors and dual degrees in this bulletin.

Colleges:		Degrees:	
AG: College of Agriculture	EN: College of Engineering	B = Bachelor's	
AS: College of Arts and Sciences	GRAD: Graduate School	M = Master's	
CB: College of Business	HS: College of Health Sciences	D = Doctorate	
ED: College of Education	LAW: College of Law	O = Other	

Major Title	B	M	D	O
Accounting (CB)	*	*		
Agricultural business (AG)	*			
Agricultural communications (AG)	*			
Agricultural economics (AG)		*		
Agricultural economics/water resources (AG)		*		
Agricultural Education (ED)	*			
Agroecology (AG)	*			
Agronomy (AG)		*	*	
American studies (AS)	*	*		
Animal and veterinary science (AG)	*	*	*	
Anthropology (AS)	*	*	*	
Architectural engineering (EN)	*			
Art (AS)	*			
Astronomy/astrophysics (AS)	*			
Atmospheric Science (EN)		*	*	
Audiology (HS)		*		
Biology (AS)	*			
Botany (AS)	*	*	*	
Botany/water resources (AS)		*		
Business administration (CB)	*	*		
Business economics (CB)	*			
Chemical engineering (EN)	*	*	*	
Chemical engineering (petroleum) (EN)	*			
Chemistry (AS)	*	*	*	
Chemistry (professional) (AS)	*			
Civil engineering (EN)	*	*	*	
Civil engineering/water resources (EN)		*		
Communication (AS)	*	*		

Major Title	B	M	D	O
Computer engineering (EN)	*			
Computer science (EN)	*	*	*	
Computer science (professional) (EN)		*		
Counseling (ED)		*		
Counselor education and supervision (ED)			*	
Creative writing (AS)		*		
Criminal justice (AS)	*			
Dental hygiene (HS)	*			
Earth System Science (affiliated major, interdisciplinary)	*			
Ecology (GRAD)			*	
Economics (CB)	*	*	*	
Economics/water resources (CB)		*		
Education (ED)		*	*	*
Education/curriculum and instruction/early childhood development (ED)		*		
Electrical engineering (EN)	*	*	*	
Electrical engineering (bioengineering) (EN)	*			
Electrical engineering (computer engineering) (EN)	*	*		
Elementary education (ED)	*			
Elementary and special education (ED)	*			
Energy Resource Science	*			
Energy Systems Engineering (EN)	*			
English (AS)	*	*		
Entomology (AG)		*	*	
Environment and natural resources (affiliated major) (GRAD)	*	*		
Environmental engineering (EN)		*		
Environmental geology/geohydrology (AS)	*			

Colleges:		Degrees:	
AG: College of Agriculture	EN: College of Engineering	B = Bachelor's	
AS: College of Arts and Sciences	GRAD: Graduate School	M = Master's	
CB: College of Business	HS: College of Health Sciences	D = Doctorate	
ED: College of Education	LAW: College of Law	O = Other	

Major Title	B	M	D	O
Family and consumer sciences (AG)	*	*		
Family and consumer sciences/early childhood development (AG)		*		
Finance (CB)	*	*		
Food science and human nutrition (AG)		*		
French (AS)	*	*		
Geography (AS)	*	*		
Geography/water resources (AS)		*		
Geology (AS)	*	*	*	
Geology and earth sciences (AS)	*			
Geology/water resources (AS)		*		
Geophysics (AS)		*	*	
German (AS)	*	*		
History (AS)	*	*		
Humanities/fine arts (AS)	*			
Interdisciplinary studies (GRAD)		*		
International studies (AS)	*	*		
Journalism	*			
Juris Doctor (LAW)				*
Kinesiology and health (HS)		*		
Kinesiology and health/early childhood development (HS)		*		
Kinesiology and health promotion (HS)	*			
Management (CB)	*			
Marketing (CB)	*			
Mathematics (AS)	*	*	*	
Mathematics/science (AS)	*			
Mechanical engineering (EN)	*	*	*	
Microbiology (AG, AS, and HS)	*			
Molecular biology (AG)	*	*	*	
Music (AS)	*	*		
Music education (AS)	*	*		
Music performance (AS)	*			
Music theory and composition (AS)	*			
Natural science (AS)		*		
Neuroscience (GRAD)		*	*	
Nursing (HS)	*	*		
Nursing/early childhood development (HS)		*		
Organizational leadership (Bachelor of Applied Sciences) (AG)				*
Petroleum engineering (EN)	*	*	*	

Major Title	B	M	D	O
Pharmacy (professional) (HS)				*
Philosophy (AS)	*	*		
Physical education teaching (HS)	*			
Physics (AS)	*	*	*	
Physics plus (AS)	*			
Physiology (AS)	*			
Planning (community and regional) (AS)		*		
Political science (AS)	*	*		
Psychology (AS)	*	*	*	
Psychology/early childhood development (AS)		*		
Public administration (AS)		*		
Rangeland ecology and watershed management (AG)	*	*	*	
Rangeland ecology and watershed management/water resources (AG)		*		
Reproductive biology (AG and AS)		*	*	
Russian (AS)	*			
Secondary education (ED)	*			
Self-designed major (AS)	*			
Social science (AS)	*			
Social work (HS)	*	*		
Sociology (AS)	*	*		
Soil science (AG)		*	*	
Soil science/water resources (AG)		*		
Spanish (AS)	*	*		
Special education (ED)	*			
Speech, language and hearing sciences (HS)	*			
Speech-language pathology (HS)		*		
Speech-language pathology/early childhood development (HS)		*		
Statistics (AS)	*	*	*	
Technical education (ED) - available only at the UW/CC Center	*			
Theatre and dance (AS)	*			
Theatre and dance (professional) (AS)	*			
Trades and industrial education (ED)	*			
Wildlife and fisheries biology and management (professional) (AS)	*			
Women's studies (AS)	*			
Zoology (AS)	*			
Zoology and physiology (AS)	*	*	*	
Zoology and physiology/water resources (AS)		*		

Admission to the University

Undergraduate Admission

The viewbooks distributed by the Admissions Office contain an application for admission. They also include specific information regarding costs, student services and UW's colleges. The Viewbook (primarily for new freshmen), Transfer and Adult Student Viewbook; individual admission applications and the General Bulletin are available from the Admissions Office, University of Wyoming, Dept. 3435, 1000 E. University Ave., Laramie, WY 82071; or you can call (307) 766-5160 in Laramie or toll free 1-800-DIAL-WYO [(800) 342-5996] or online at www.uwyo.edu. For information or to schedule a campus visit, call one of the above phone numbers.

The UW General Bulletin and other undergraduate admission materials are also available in high school counseling offices. Applicants for graduate school should refer to the Graduate Admission section of this bulletin and contact the Graduate School for information about the online graduate application and graduate admission.

Students may apply for admission up to one year before they intend to enroll. Admission decisions are made on a rolling basis as soon as the application, required transcripts, and appropriate test scores are received by the Admissions Office. To avoid delays and complications, all application materials should be on file in the Admissions Office at least 30 days before the beginning of the semester.

Current high school students should take the American College Testing (ACT) Program or the Scholastic Aptitude Test (SAT) during the spring of their junior year or the fall of their senior year and have the official test score report sent to UW, complete the UW application for admission, and have their high school transcript sent to the UW Admissions Office. Writing sections for both the ACT and SAT are not currently considered as part of the admission requirements. ACT or SAT results are required for new freshmen, who are younger than 21 years old, for admission and to assist students with math placement, academic advising and for use in academic scholarship selection. A final, official high school transcript showing the graduation date is required after graduation to complete admission requirements. The \$40.00 nonrefundable application processing fee is required for all first time UW undergraduate students.

Freshman Orientation: All new freshmen and transfer students are strongly urged to attend one of the new student orientation sessions prior to each semester. These sessions provide students with an opportunity to meet faculty and staff, plan an academic schedule, discuss phases of college life, and register early for the semester. Additional information concerning orientation programs may be obtained by writing or calling the Admissions Office, University of Wyoming, Dept. 3435, 1000 E. University Ave., Laramie, WY 82071, (307) 766-5160 in Laramie or toll free at (800) 342-5996 or online at www.uwyo.edu/orientation.

All transcripts must be sent directly to the Admissions Office (for undergraduate admission) or to the Graduate School (for graduate admission) by the originating institution. The University of Wyoming will only accept transcripts sent directly to UW from each previously attended institution. Official faxed transcripts can be accepted from the Wyoming community colleges.

The Admission Process

New Freshmen

Undergraduates who have less than 30 transferable college credit hours, must meet the following UW Admission Standards.

A. Assured Admission

To qualify for assured admission to the University of Wyoming, high school graduates who are first-time college students or college transfers with fewer than 30 transferable semester credit hours, must meet the following minimum admission requirements.

1a. Graduates of a Wyoming high school: cumulative high school grade point average of 2.75 or above based on a 4.0 grading scale.

1b. Graduates from a non-Wyoming high school: cumulative high school grade point average of 3.0 or above, or a 2.75 and an ACT score of at least 20 or a SAT score of at least 960.

1c. Graduates with less than 30 transferable college credit hours: cumulative transferable college GPA must be at least 2.0; submit your high school transcript, ACT or SAT test scores, and meet 1a if a graduate of a Wyoming high school or 1b if a graduate of a non-Wyoming high school.

1d. Home Schooled: must meet the same requirements as other high school graduates; submit transcripts and ACT or SAT test scores. Please contact the Admissions Office for a Home School Credit Evaluation Form or access the form at www.uwyo.edu. The home school instructor should complete the form.

2. Completion of at least 13 high school units in the following pre-college curriculum (a unit=1 year):

English/Communication/Language Arts

Four units of English/Communication/Language Arts (ECLA) or their competency-based equivalents are required, of which at least three units must have a substantial writing component. Speech and other communication-based courses which contain "a substantial writing component" may be used to meet this requirement. An alternative to four units of ECLA is three units of ECLA, plus two units of foreign language study in the same language.

Mathematics

Three units of mathematics or their competency-based equivalents are required, to include the concepts of a college preparatory Algebra I, Algebra II, Geometry sequence. It is strongly recommended that Algebra II, Geometry or a higher level math course be taken during the senior year of high school.

Science

Three units of science or their competency-based equivalents are required. At least one of the units must be from the physical sciences—physics, chemistry, or a college preparatory physical science course. The other two units may be from any combination of biological, life, physical or earth/space science.

Cultural Context Electives

Three units or their competency-based equivalents are required to be selected from behavioral or social sciences, visual or performing arts, humanities or foreign languages. These units may be in any combination.

B. Admission With Conditions

Admission with conditions will be granted to first-time college students or students with fewer than 30 transferable semester credit hours who do not qualify for assured admission, but who satisfy all of the following requirements.

1. Graduates of state accredited high schools who have a cumulative high school grade point average of 2.5-2.75, or a 2.25-2.49 grade point average with an ACT score of at least 20 or an SAT score of at least 960.
2. Completion of the pre-college curriculum with no more than two deficiencies. In addition, no more than one deficiency can be in each of the four pre-college categories.
3. Students who did not graduate from a state accredited high school may qualify for admission with conditions to the University of Wyoming if they have a GED examination with an average score of at least 550 and no individual score below 500. In addition, GED applicants under 21 years of age must supply an ACT composite score of at least 20 or a SAT composite of 960 or higher. GED applicants must also be at least 18 years old and their high school class must have graduated. GED applicants must have a 2.0 or higher cumulative grade point average for all transferable college courses.
4. "Non-traditional" students, defined as students age 25 or older, who have not completed a college level course during the past three calendar years (excluding correspondence study courses) and who do not otherwise qualify for assured admission, may qualify for admission with conditions if they have a cumulative high school grade point average of 2.0 or higher.

Terms of Admission With Conditions

1. Students will enroll in the Synergy learning community. Synergy consists of designated sections of three University Studies courses in the student's first semester: ENGL 1010, POLS 1000, and UWYO 1450. In the second semester, Synergy continues with designated sections of one more course: COJO 1010. Exceptions to enrollment in Synergy may be granted at the discretion of the Director of Admissions.
2. In addition to 9 hours of Synergy courses, students may enroll for up to a maximum of 6 more semester hours during the first semester at UW, for a total of 15. It is recommended that the 15 hour limit be observed for the second semester as well. However, an exception to the 15 hour limit in the second semester may be granted at the discretion of the academic adviser based upon the student's performance in the first semester.
3. Students will meet with a designated adviser on a monthly basis throughout their first two semesters.
4. Students admitted with conditions will normally receive advising from the college of their major or the Center for Advising and Career Services (www.uwyo.edu/CACS) in Knight Hall 228.
5. Space in the program is limited; applicants admissible under these conditions are encouraged to apply early.

Contact the Office of Admissions with any questions.

C. Deferred Admission

Applicants who do not qualify for assured admission or admission with conditions will have their admission deferred until they complete 30 or more transferable semester hours at an accredited collegiate institution, with a cumulative grade point average of 2.0 or higher.

D. Admission Exception Process

Students who do not otherwise meet the qualifications for assured admission or admission with conditions may request an admission exception in order to be admitted with conditions. To initiate a request for admission by exception, applicants should describe in writing the rationale for their specific exception request and send the request to the Admissions Office.

Undergraduate Transfer Students

College transfer students with 30 or more transferable semester credit hours must have a 2.0 or higher cumulative grade point average for admission to UW. College students interested in transferring to UW should call or write the Admissions Office to request a copy of the *Transfer and Adult Student Viewbook* or go online to www.uwyo.edu.

Applicants who have taken college-level course work and desire to transfer to the University of Wyoming should apply for admission and have one official transcript from each previously attended college or university sent directly to the Admissions Office. Course work from regionally accredited institutions will be accepted as transfer credit if substantially equivalent to courses offered by UW. The university accepts only academic courses in the study of religion similar to those offered by the Religious Studies Program in the College of Arts and Sciences.

Transfer students with less than 30 transferable semester hours must also have an official copy of their high school transcript sent directly to the Admissions Office by their former high school. Transfer students under age 21, who have less than 30 transferable credit hours, must also have their ACT or SAT results sent to the UW Admissions Office. Please refer to the "New Freshmen, A. Assured Admission" section.

Admission Exception Process

College transfer students who do not meet the 2.0 grade point average requirement for admission to UW may initiate a request for admission by exception. Applicants should describe in writing the rationale for their specific exception request and send the request to the Admissions Office.

Students working toward a second bachelor's degree are considered undergraduate students and are subject to all undergraduate policies and regulations.

General Educational Development (GED) Certificate Holders

1. Applicants must have an average score of at least 550 on the GED test with no individual score below 500.
2. Applicants less than 21 years old must submit ACT or SAT results to the Admissions Office.
3. Applicants must be a minimum of 18 years of age or his or her high school class must have graduated.

Adult Nontraditional Students

Adults who do not qualify for regular admission to UW may qualify for admission as nontraditional students. Nontraditional admission requirements are:

1. Minimum age of 25;
2. Minimum of three years since last enrollment in college courses, except correspondence;
3. Send official copy of high school transcript and any college transcripts directly to the UW Admissions Office by the previous institutions.
4. Send official GED scores if applicable.
5. Students admitted under this policy are undeclared majors and will receive their initial academic advising from the Center for Advising and Career Services in 228 Knight Hall, (307) 766-2398.

6. Students considered for adult nontraditional admission must have had a 2.0 or higher grade point average in high school.
7. Neither ACT nor SAT scores are required for students over 21.

High School Guest Students

High school seniors and juniors will be considered for admission to UW as high school guests. The following requirements must be met:

1. Complete a UW High School Guest application;
2. Have an official copy of the most recent high school transcript, showing an overall GPA of at least 3.0 sent directly to the Admissions Office;
3. Submit a positive written recommendation from the high school counselor or principal;
4. Submit available ACT or SAT scores.

If high school guest admission is granted, it is for one semester at a time. Subsequent enrollment requires the most recent transcript and new written permission from the high school. High school guests may take up to 6 credit hours per semester. Advising will be provided by the Center for Advising and Career Services in 228 Knight Hall, (307) 766-2398.

Undergraduate Non-Degree Student

1. Must complete and submit a Non-Degree Student application.
2. Transcripts and test scores are not required for non-degree status.
3. Non-degree students may enroll in a maximum of 7 credit hours per semester (maximum of two courses). Only 12 credit hours taken in this status may be used towards a UW degree.
4. Admission with non-degree status is not available to international students or students on suspension.
5. Students admitted with non-degree status are assessed tuition and fees at the same tuition rate as degree-seeking students.
6. Students admitted with non-degree status do not qualify to receive financial aid.

Graduate Admission

(307) 766-3802

E-mail: uwgrad@uwyo.edu

Web site: www.uwyo.edu/uwgrad

Applicants must submit the UW graduate application and the nonrefundable application processing fee. This may be done through the Graduate School Web site. Once submitted, the application and fee payment remain valid for three years. One set of official transcripts must be sent directly to the UW Graduate School from each previous collegiate institution.

Domestic applicants must have completed at least a bachelor's degree from a regionally accredited institution. International transcripts will be evaluated for accreditation and U.S. degree equivalency. International applicants must have completed at least a degree equivalent to a U.S. bachelor's. All applicants should have at least a 3.0 cumulative GPA (scale of 4.0).

Applicants whose department requires the Graduate Record Examination (GRE) must request official scores be sent to the Graduate School directly from the Educational Testing Service (ETS). Our institution code with ETS is 4855. A score of at least 900 on the combined verbal and quantitative sections is required, (1000 for doctoral programs and 1100 for interdisciplinary). Students can occasionally be admitted provisionally with lower test scores.

Some departments may require scores from the Graduate Management Admission Test (GMAT), rather than the GRE, with a minimum score of 500.

International student applicants for whom English is not the native language must furnish scores from the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), the English Language School (ELS) or other approved test of English communication skills. The minimum paper TOEFL score acceptable for full admission is 540. This corresponds to the Internet-based TOEFL of 76. The minimum IELTS score for full admission is 6.0. Other approved tests will be acceptable at the level of the TOEFL score. Students may occasionally be admitted provisionally with lower test scores. Official scores must be sent directly from the testing agency (i.e. TOEFL scores must be sent from ETS).

Please note that some departments require higher GRE/GMAT/TOEFL scores than what is required by the Graduate School.

Three letters of recommendation must be submitted to the department. These forms are available on the Graduate School Web site.

To obtain graduate, non-degree status, an application, \$50 fee, and transcripts must be submitted to the Graduate School. Only 12 credit hours taken with non-degree status may apply toward a graduate degree pending approval by the student's graduate committee. This 12-credit-hour rule may be decreased if prior courses were reserved for graduate credit or transfer hours are going to be used on the program of study.

Please note that non-degree students are not eligible for student financial aid. Non-degree graduate students deciding to pursue a degree must apply to and be accepted by the Graduate School. If the degree-seeking application is filed within three years after filing the non-degree application, the \$50 application fee is transferable.

Graduate applicants should write or call the respective academic departments for questions concerning application status, degree program requirements, deadlines, and supplemental application materials they may require.

Students admitted with graduate standing may elect to take any undergraduate or graduate courses for which they are prepared, subject to restrictions as outlined in the *Graduate Bulletin*. However, tuition will be assessed at the graduate level for all courses taken with graduate status. Admission to graduate study does not automatically make a student a candidate for an advanced degree.

Note: Students working toward a second bachelor's degree are not considered graduate students and are subject to all undergraduate regulations.

College of Law Admission

(307) 766-6416

E-mail: lawadmis@uwyo.edu

Web site: www.uwyo.edu/Law/

Admission to the professional curriculum of law is granted by the College of Law Admissions Committee. The College of Law reserves the right to restrict the number of entering students to a class size consistent with its facilities and its educational objectives. Additional information and requirements are provided in the *College of Law Bulletin*.

1. Complete and return the College of Law Application for Admission between October and March 1 along with the nonrefundable application processing fee.
2. Applicants must have a bachelor's degree from an accredited college or university (subject to some limited exceptions).
3. Take the Law School Admission Test (LSAT) administered by the Law School Admission Council (LSAC) no later than the February administration. The LSAT is given four times each year at numerous locations within and outside of the United States. Information about the test, dates, test locations and application form may be obtained from LSAC, Box 2000, Newtown, PA 18940-0998, (215) 968-1001, or on the Web at www.lsac.org.

4. Register with Law School Data Assembly Service (LSDAS) between September and January. Complete and submit the appropriate form, included in the LSAT/LSDAS packet, together with the required fee. An official transcript from each college attended must be sent directly to LSDAS. It is advisable to register with LSDAS at the same time one registers for the LSAT. The Transcript Request Form in the LSDAS registration booklet is to be used for this purpose. LSDAS prepares an analysis of each transcript and a report of the LSAT score and forwards a copy to each law school to which application has been made. Applicants do not send transcripts directly to the College of Law until they are admitted. For more information about LSDAS, go to www.lsac.org.
5. International students must supply current TOEFL scores. Minimum scores required for admission are 525 (197 on the computerized test). International students must take the LSAT exam and register with the Law School Admissions Council (www.lsac.org). If a transcript analysis will not be provided by the LSAC for any foreign educational institutions attended, official transcripts must be provided with an English translation.

WWAMI Medical Education Program

WWAMI is a contract program between the University of Wyoming and the University of Washington for medical education. Admission is twofold. Applicants must be certified residents of Wyoming. To be eligible for certification, the applicant or parent or guardian must be a legal resident of the State of Wyoming for five continuous years immediately prior to enrolling at the University of Washington. Applications for certification are located at www.uwyo.edu/wwami and are due no later than October 15 of the year preceding the anticipated start date of medical school. Participants must either pay back the money expended on their behalf plus interest or practice medicine in Wyoming for three years. Applicants must apply to the University of Washington School of Medicine through the usual procedures. Admission to the medical school is subject to criteria established by the University of Washington. Information and residency applications may be obtained from the College of Health Sciences, Preprofessional Advising Office, Dept. 3432, 1000 E. University Ave., Laramie, WY 82071; (307) 766-6704 or (307)766-3499.

School of Pharmacy Admission

Admission to the preprofessional pharmacy program is through the university admission process described previously.

Admission to the professional curriculum leading to the entry-level professional Doctor of Pharmacy (Pharm.D.) degree is granted by the Associate Dean of Student Affairs of the School of Pharmacy upon the advice of the School of Pharmacy Student Affairs Committee. The application process requires that students apply to the School of Pharmacy using Pharm CAS, for more information about Pharm CAS log on to www.Pharmacas.org. The application deadline is January 5th for fall admission. Admission to the professional program is limited and competitive. For further information, contact the School of Pharmacy, Dept. 3375, 1000 E. University Ave., Laramie, WY 82071; (307) 766-6132.

International Student Admission

The University of Wyoming will admit international students who meet admission requirements. To apply for admission as an undergraduate student, contact the UW Admissions Office for an International Student Application or go to the UW web site at www.uwyo.edu/international. Application deadlines for international students are June 1 for fall semester, November 1 for spring semester, and April 1 for summer session. The \$40.00 undergraduate international student application processing fee must be received before the application will be processed.

International students must provide official attested academic records and examination results. These records should be sent directly to the Admissions Office by the school attended. Applicants must provide an English translation of all required academic records, and complete all applications and correspondence in English.

Students who have a native language other than English must provide proof of satisfactory English ability. This can be done by providing official score reports from TOEFL, IELTS, ELS or other approved tests of English ability. The minimum acceptable score for the TOEFL exam is 525 on the paper-based exam or 197 on the computer-based exam for most majors. Engineering majors are required to have a minimum TOEFL exam score of 550 paper-based or 213 computer-based. The minimum acceptable IELTS score is a 5.5. Engineering majors require a minimum IELTS score of 6. ELS students must complete ELS level 112 for admission to the University of Wyoming. Specific academic programs such as engineering and pharmacy may require a higher level of English proficiency. Other approved English proficiency exams may be accepted in lieu of the above.

Proof of immunization for measles, mumps, rubella (MMR) and testing for tuberculosis are required prior to registration. See later section in bulletin.

All applicants must provide evidence of adequate financial resources to pay the total cost of their education. The Confidential Financial Statement for undergraduate international applicants can be found on-line at www.uwyo.edu/apply. It must be used for this purpose. Scholarships are available based upon academic achievement.

Graduate School applicants will have different admission requirements. For additional information regarding the admission of international students, see www.uwyo.edu or contact the UW Admissions Office (307) 766-5160 for undergraduate applicants, or the Graduate School (307) 766-2287 for graduate admission information.

Wyoming Senior Citizen Policy

Wyoming senior citizens, age 65 and over, who have been admitted to UW may enroll in university courses on a space available basis at no cost upon presentation of evidence of age and Wyoming residence prior to the beginning of the term in which classes will be taken.

Since standard registration fees will not be assessed, additional student benefits will not be available under the senior citizen policy. Alternatively, full-time senior citizen students wishing to receive student benefits may enroll and pay regular registration fees. Scheduled Outreach School classes which meet minimum enrollment requirements are included in the courses available to senior citizens.

Board of Trustee Retirement Benefits

Beginning Spring 2002, official board retirees may attend University of Wyoming classes on a space available basis at no cost. To qualify for this benefit, you must be an official board retiree, 25 years of university service or age 60 with 15 years of immediately preceding university service.

Readmission

Readmission is the process for former University of Wyoming students to again be admitted to the university. Former UW students who have attended another college since their last UW enrollment must have one official transcript from each college sent directly to the UW Admissions Office. Undergraduate students who are returning to UW after an absence of one calendar year or longer should complete an application for admission at least 30 days prior to registration, thereby allowing sufficient time to avoid delays in registration.

Former students who are on academic suspension at UW must petition for reinstatement through the dean of their college. Reinstatement petitions must be submitted at least 15 calendar days before the beginning of general registration for each term.

Academic Renewal: An undergraduate student who returns to UW and has not completed a college course at UW (excluding flexible enrollment [correspondence study]), during the previous five years, will have the option of continuing his or her earlier UW cumulative GPA or commencing a new cumulative GPA under the Academic Renewal policy. Interested students must submit the Academic Renewal Application Form (which can be obtained in the Office of the Registrar) to the registrar no later than ten class days before the last day of classes of the semester in which the student returns to UW.

The entire UW transcript will remain intact. A note indicating the policy will precede the new part of the UW transcript if the student opts for academic renewal. At the discretion of the academic department in which the student is enrolled, credit hours for which the student earned the grade of C or better may be applied toward the completion of the degree requirements. The list of any departmentally approved courses must be indicated on the Academic Renewal Application Form when initially submitted to the registrar. No further changes may be requested.

A student's GPA and completed courses that were applied to a baccalaureate degree are not eligible for academic renewal.

Residency Student Classification

The following Trustee regulations govern the classification of students at the University of Wyoming as resident or non-resident for tuition purposes, and shall be administered by the Associate Vice President for Enrollment Management and Director of Admission. (Trustee Regulation, Chapter VIII, Section 3.)

Student Classification for Tuition Assessment

The University of Wyoming assesses tuition for Wyoming residents at the in-state rate; non-residents are charged out-of-state tuition. The following guidelines shall be administered by the Director of Admissions to govern University of Wyoming students for purposes of in-state or out-of-state tuition assessment for courses of study offered at the university. University-sponsored courses of study arranged with institutions outside Wyoming may have different residency requirements.

1. The following students are Wyoming residents:
 - a. Individuals who are financial dependents or under the age of 24 with a parent, guardian or spouse who lives in the state of Wyoming.
 - b. Individuals who are recipients of Wyoming high school credentials.
 - c. Active Wyoming National Guard members and U.S. Armed Forces members stationed in Wyoming, and their dependents.
 - d. Individuals with a permanent home in Wyoming and who have resided in the state for at least one full year. To determine if a permanent Wyoming home has been established, the following factors are considered:
 - Evidence that any former home has been abandoned
 - Full-time employment performed or contracted for in Wyoming for one continuous year
 - Ownership of home or property in Wyoming
 - One year of continual presence in Wyoming
 - Former Wyoming residency and maintaining state ties
 - Reliance on Wyoming resources for significant financial support
 - Wyoming vehicle registration
 - Wyoming address on most recent federal income tax return
 - A valid Wyoming driver's license
 - Wyoming voter registration
- Residing in Wyoming primarily as a student will not support a claim for resident status.
- e. Graduate students with university-funded fellowships.
 - f. Wyoming residents temporarily absent from the state due to military service, attendance at an educational institution, or other type of documented temporary sojourn.
 - g. Individuals who have been awarded resident tuition status at a Wyoming Community College and who attend the university within one year of leaving the Wyoming Community College.
 - h. The spouse or financial dependent of an individual who is determined to be a Wyoming resident pursuant to this Regulation, except under (1b) and (e) above.
2. The following students are non-residents:
 - a. Individuals who do not qualify for Section 1 above;
 - b. Individuals who are not U.S. citizens or permanent residents except as provided by Section 1b. above
 3. Reduced tuition rates calculated at one hundred fifty percent (150%) of resident tuition are available to the following non-residents.
 - a. Graduates of the University of Wyoming and their spouses;
 - b. Children, and their spouses of University of Wyoming graduates.
 4. Change of residence classification shall be governed by the following process:
 - a. An initially assigned non-resident classification may be reviewed by the Director of Admissions when a request and accompanying documentation is provided on or before the first day of classes. A decision on reclassification by the Director of Admissions may be appealed to the Residence Classification Committee within twenty (20) calendar days of the date of the Director of Admissions' decision. No reclassification will be retroactive to previous terms;
 - b. Individuals may be reclassified for the following term when facts indicate that a change in residency has occurred since the time of original residence classification;
 - c. The Director of Admissions is responsible for the administration of this procedure.
 5. There shall be a Residence Classification Committee consisting of three members appointed by the President, chaired by the Director of Admissions who shall not vote. The duties of this committee shall be as follows:
 - a. To render interpretations and rulings at the request of the Director of Admissions;
 - b. To serve as an appeals committee for students who wish to appeal the decision of the Director of Admissions;
 - c. To consider university policies in the area of residence classification and make recommendations to the Trustees of the University of Wyoming.

Measles, Mumps, Rubella (MMR) Immunization Requirement

The University of Wyoming has implemented a policy to protect the University community against measles (rubeola), mumps, and rubella. All new on-campus students must provide proof of immunity to measles, mumps, and rubella prior to registration. The *Student Immunization and Health History Form* (available on the web at www.uwyo.edu/ShSer/Forms/HealthHistory.pdf) must be completed, verifying compliance with this requirement, and sent to the Student Health Service prior to registration. Effective 9/3/02, two doses of MMR vaccine are required. Other acceptable methods to comply with the requirement are detailed on the Form. Please note that the first page of the form must be verified and signed by a health care provider. Alternatively, a verified copy of an immunization record can be appended to the Form.

The only contraindication to the MMR immunization is a previous severe allergic reaction to the vaccine or vaccine component (neomycin, gelatin). Relative (temporary) contraindications include: pregnancy; persons with immunosuppressive illnesses or treatment; moderate or severe acute illness; and recent receipt of blood products. If you are uncertain as to whether you should receive the immunization, please talk with your health care provider.

Exemptions may be granted to the requirement in two instances: a medical exemption for a contraindication noted above, and a religious exemption. A medical exemption requires a notation of the reason for the exemption and a medical provider signature. *To claim a religious exemption, a notarized form must be completed and attached to the Student Immunization and Health History Form.* If an outbreak of one of these illnesses occurs on campus, students granted an exemption may be excluded from campus for the duration of the outbreak.

For students unable to verify MMR vaccinations, the vaccine is available at the Student Health Service for a nominal charge. It will be administered prior to registration for any eligible student, without an appointment, during office hours. Do not delay verification or immunization until registration, as it is impossible to service all incoming students on one day.

In addition to the MMR requirement, students who are not US citizens are required to have tuberculosis testing prior to registration. This involves a Tuberculosis (Mantoux) skin test, and, if positive, a chest x-ray and consultation with a Student Health Service physician. The student is responsible for the costs incurred for these tests.

Campus Safety

Information on campus safety is available on request from the University Police Department, Iverson Building.

Student Financial Aid

The Office of Student Financial Aid coordinates all student financial assistance available at UW. Available aid includes scholarships, grants (Hathaway Scholarships, Federal Pell, Federal ACG-Smart, Federal SEOG), loans (Federal Perkins, Federal Stafford, Federal PLUS and private) and employment (Federal Work-Study).

The Student Financial Aid office will help all qualified applicants to secure aid, but resources are limited. Aid is offered first to those applicants whose materials are completed and received by March 1 prior to the academic year for which aid is sought. Federal Pell Grants and Federal Stafford Loans are available to qualified applicants throughout the year.

Prospective students seeking scholarships should send an application for admission, the nonrefundable application fee and a copy of their current high school or college transcript to the UW Admissions Office by March 1. Students who have attended another college must have that college submit an academic transcript to the UW Admissions Office.

Students seeking federal aid or assistance based on their financial need must file a Free Application for Federal Student Aid (FAFSA). Applicants may do so at www.fafsa.ed.gov. Allow one week for processing. UW recommends filing the FAFSA in January prior to the next academic year. Final responsibility for ensuring that all required documents are received in a timely manner rests with the applicant.

Enrollment Requirements

Most scholarships require the recipient to be enrolled full time. Hathaway Scholarships, Federal Pell Grants, and veteran's benefits may be pro-rated for part-time enrollment and Federal Stafford Loans may only be borrowed by students enrolled for at least half time (a minimum of 6 hours for undergraduate, law and pharmacy students; a minimum of 4.5 hours for graduate students). Federal Pell Grants and Federal SEOG Grants are available to undergraduate students who have not completed the requirements for their first undergraduate degree. Classes for audit are not acceptable for any kind of financial aid. Generally, Federal aid is not available for UW Flexible Enrollment (correspondence) courses, for continuous registration hours, or for audit hours. For details, ask a financial aid adviser.

Eligibility Requirements

To receive federal financial aid (such as Federal Pell, Federal ACG-Smart, and Federal SEOG grants, Federal Work Study, Federal Perkins, Federal Stafford [subsidized or unsubsidized], and Federal PLUS loans) you must meet the following conditions and provide supporting documentation when requested to do so: have a high school diploma or its equivalent, be enrolled or accepted for admission as a regular student at UW, not be concurrently enrolled in an elementary or a secondary school, be enrolled in a degree program, be a U.S. citizen or eligible non-citizen, have a demonstrated financial need if required, maintain satisfactory academic progress (SAP), not be in default on a federal student loan or owe an overpayment of a federal grant at any institution (or, if so, have made satisfactory arrangements to repay or otherwise resolve the overpayment or default), not have borrowed in excess of the annual or aggregate loan limits of a federal loan program (loan borrowers only), agree to use funds received only for educational costs, register with the Selective Service if required, and not have had federal financial aid benefits suspended as result of a drug conviction.

Satisfactory Academic Progress (SAP)

Federal regulations require the University of Wyoming to establish satisfactory academic progress standards for student financial aid recipients. The University of Wyoming standards of SAP measure a student's academic performance both qualitatively and quantitatively by reviewing the following three areas of performance: completion rate for all (cumulative) course work enrolled, cumulative grade point average (CUM GPA) earned, and the maximum time frame to complete a degree. Failure to comply with any one of the following requirements will result in a loss of federal student aid eligibility:

- the minimum CUM GPA for undergraduates and professional students (J.D. or Pharm.D.) is 2.000. For graduate students, the minimum CUM GPA is 3.000;
- each student must complete at least 67% of all credit hours attempted cumulatively at UW;
- undergraduate students (including 1st and 2nd year Pharmacy students) must complete graduation requirements in no more than 150% of the average length of their program. The 150% marker for most undergraduates is 180 (120 x 1.5) credit hours as 120 credit hours are required for most undergraduate programs.

Satisfactory Academic Progress is reviewed annually in May at the end of the spring semester. Students not meeting the GPA and completion requirements for the first time will be automatically placed on "initial financial aid probation." Initial financial aid probation simply provides an opportunity for students to correct deficiencies and reestablish compliance with the SAP standards. Students have until the end of the succeeding spring semester to correct their SAP deficiency. Students remain eligible for federal financial aid while on "initial financial aid probation." Students are only eligible for the initial financial aid probation provision once. At the end of the probationary period, the student will either be:

- removed from probationary status because all components of the SAP policy have been met; or
- suspended from receiving assistance from federal sources and will receive a Financial Aid Suspension Letter.

Suspended students are no longer eligible for federal financial aid until they have taken classes, using their own funding, and raised their cumulative GPA or completion rate to meet the SAP standards. Suspended students may appeal their financial aid suspension. To do so, a student must submit their appeal no later than the end of the "Drop/Add" period of the semester for which the approval is sought by providing the Office of Student Financial Aid with a fully completed and signed SAP Appeal Form explaining why he/she should not be suspended. A student may appeal due to mitigating or extenuating circumstances that could not be influenced, planned for, or prevented by the student (e.g., hospitalization, prolonged illness, death in the immediate family, etc.). Documentation verifying the situation is required and must accompany the appeal. The outcome of a student's appeal depends upon the nature of the circumstances causing the violation, how well that is documented, and how well they have demonstrated that they are now making good progress toward earning their degree. The SAP Appeal Form is available online at the Office of Student Financial Aid's web site for downloading and printing or directly from the office.

Contact the Office of Student Financial Aid for more information regarding SAP.

Funds Distribution

Each student who registers has his or her own student account with the university. Once a qualified student has registered for classes and accepted their awards on WyoWeb, the Office of Student Financial Aid will authorize the electronic transfer of funds from UW financial aid accounts to the student's individual account at the university.

Federal Stafford loans are made by commercial lenders. Lenders electronically transfer loan proceeds to the university for direct deposit to student accounts. Federal Stafford Loan amounts may be reduced by amounts up to 4 percent to be retained by lenders as origination and guarantee fees. First-time borrowers of federal student loans must participate in entrance loan counseling (view a web presentation). All student loan borrowers must participate in an exit loan interview (in person or on the web) prior to leaving UW.

Federal Work-Study funds are paid as payroll checks or direct deposit on the 15th and last working day of the month following the month in which the hours were worked. Payroll checks may be direct deposited or mailed to the student.

The university will automatically charge a student's account for tuition and fees based on the student's enrollment. Likewise, if the student is living in a university residence hall, room and board charges will be placed on the student's account.

Any financial aid credited to a student's account will automatically pay tuition and fees first and then charges for room and board in UW residence halls. Unless directed otherwise in writing by the student, any remainder will be applied to other university charges. If a negative balance results, a "credit balance check" will be prepared by the university made payable to the student. This check will be mailed to the student's mailing address prior to the first day of classes or after the term begins.

A scholarship awarded for the academic year will be split into two equal payments to the recipient's student account with one to be paid at the beginning of each semester unless the donor or selection committee specifically directs that it be paid differently.

Students enrolled in a domestic or international exchange program or a study abroad program approved by UW for academic credit are eligible to apply for federal student financial assistance. Likewise, students concurrently enrolled in classes at two or more eligible institutions of post-secondary education may apply for federal aid. A special consortium agreement between institutions must be completed prior to each semester a concurrently enrolled student seeks aid. Those granted a Federal Work-Study allocation have opportunities to perform community services to earn their allocation.

Information describing available aid, award criteria, rights and responsibilities of aid recipients, costs of attendance or refund and repayment policies and schedules is available by writing to Office of Student Financial Aid, Dept. 3335, 1000 E. University Ave., Laramie, WY 82071, or viewing the financial aid web site at www.uwyo.edu/SFA/.

Important: Students are assumed to be full-time when their initial financial aid is determined. If you plan to attend less than full-time in any semester, your financial aid will be adjusted to reflect your true tuition costs. It is always best to make the Office of Student Financial Aid aware of your intended enrollment prior to the start of a semester so that accurate amounts of financial aid may be applied to your account.

Financial aid policies are subject to change without notice to reflect modifications in federal, state and institutional laws and regulations.

Veterans Educational Benefits

Students who have served in the armed forces may be allowed credit for courses taken in some military schools. Students who desire to apply for credit on the basis of the military schools should submit a copy of the DD-214 Form or its equivalent to the Office of the Registrar. Individual colleges will determine whether such courses will be applicable to degree programs.

All veterans seeking educational benefits must register with the veterans' certification specialist in the Office of Student Financial Aid, 174 Knight Hall, (307) 766-3016. This includes completing a veteran's registration card each semester.

Those veterans not completing a veteran's registration card by the last day of the late registration period will be dropped from VA educational assistance at the university. Class load requirements for veterans are as follows:

Undergraduate, Law and Pharm.D. Veterans:

Full-time	12 or more credit hours
3/4 time	at least 9, but fewer than 12 hours
1/2 time	at least 6, but fewer than 9 hours
Less than 1/2	registration credit hour fee reimbursement only

Graduate Veterans:

Full-time	9 or more graduate credit hours or certification by dean of the Graduate School*
3/4 time	at least 7, but fewer than 9 graduate credit hours or certification by dean of the Graduate School*
1/2 time	at least 4.5, but fewer than 7 graduate credit hours or certification by dean of the Graduate School*
Less than 1/2	registration credit hour fee reimbursement only

*The final responsibility for seeing that the veteran's certification specialist has a certification from the dean of the Graduate School rests with the student. This must be received by the last day of scheduled registration.

If any portion of a veteran's schedule is composed of courses which are less than the full semester in length (i.e., short courses, workshops, "blocked" courses, etc.), the rate of benefit payment may be affected. If you have any questions or concerns, contact the veteran's certification specialist in the Office of Student Financial Aid, 174 Knight Hall, (307) 766-3016.

Withdrawal from a class or classes could reduce a veteran's benefits for that term. For details, contact the veteran's certification specialist in the Office of Student Financial Aid.

National Guard Benefit

Active Wyoming National Guard members in good standing and considered to be satisfactory participants may apply to participate in the Guard's Education Assistance Plan. The Plan provides 100 percent tuition and mandatory fee payment for all courses (except repeated courses) leading to one degree at UW, as long as the recipient continues to meet academic and service commitment requirements. Recipients must agree to serve in the Guard for at least two years after earning their degrees. This benefit may be used concurrently with Veterans Educational (GI Bill) Benefits. For information and application packets, please contact the Wyoming National Guard at 800-832-1959, ext. 5262, the UW Outreach School at 800-448-7801, or the UW financial aid office at (307) 766-3016.

Tuition and Fees

Semester Tuition and Fee Schedule 2009-10 (subject to change)

The University of Wyoming semester tuition and fee schedules for the 2009-10 academic year, which begins with fall semester 2009, are not available as of the publication of this document. Updated information about tuition and fees will be available on WyoWeb or from Accounts Receivable, Room 250, Knight Hall, on April 1, 2009.

Summer school tuition and fees will be published in the *2010 Summer Bulletin*.

Full-time undergraduate refers to undergraduate students enrolled for 12 or more hours, and part-time undergraduate refers to undergraduate students enrolled for less than 12 hours. At the graduate level, 9 or more hours is considered full time and less than 9 hours is classified as part time. Fees do not include special fees.

Student Benefit Package and Insurance

At the beginning of each semester, the part-time student benefit package will be added to the tuition bills of all part-time students (6 through 11.5 credit hours for undergraduates and 4.5 through 8.5 credit hours for graduate students) who have elected to keep the insurance. The cost of the part-time benefit package is not available as of the publication of this document. The benefit package allows part-time students the same benefits as full-time students including, but not limited to, the use of Student Health Service, Half Acre Gym and the opportunity to apply for short-term emergency student loans.

Graduate students taking less than 4.5 credit hours must contact the Graduate School, 109 Knight Hall, to discuss eligibility for and/or payment of the benefit package. Graduate students not receiving a fee waiver need to pay for the package at the Cashier's Office, 170 Knight Hall.

Students who own insurance or choose not to have any health insurance must waive the university's health insurance program at the time of registration. Part-time students who waive the insurance coverage can contact Accounts Receivable, 250 Knight Hall, to sign on for a benefit package, if applicable.

Tuition and Fee Payment 2009-2010

All university charges are due prior to 4 p.m. the first Friday of each Fall and Spring Term.

An institutional Payment Plan is available for students who:

1. have made an enrollment confirmation payment of 1/3 total current term charges due plus 100% of prior term charges, required prior to 4 p.m. the first Friday of the term or
2. has "OFFERED and ACCEPTED" financial aid equal to or greater than the 1/3 total current term charges plus 100% of prior term charges.

A \$15.00 payment plan enrollment fee is charged per semester. The payment plan allows for two additional payments approximately 30 days and 45 days into the term. Please see the semester class schedule for the exact due dates. Interest of 1.5% per month will be charged on all past due amounts.

Students who have not paid their charges in full or made the enrollment confirmation payment by 4 p.m. on the first Friday of the term will be dropped from classes. A \$50 reinstatement fee will be charged to reinstate.

To be reinstated, a student must pay one-third of the anticipated charges plus a \$50.00 reinstatement fee. Students owing \$75.00 or less will not be placed in the payment plan or dropped. Please check your Student Account on WyoWeb to determine the amount due or contact Accounts Receivable at (307) 766-6232.

Charges for a course delivered by Outreach Credit Programs are due approximately one month before the first day of the class or upon enrollment, whichever occurs later. **Please contact Outreach Credit Programs for details and for exact deadline dates.**

Special Course Registration Fees

Additional charges (special course and college fees) must be paid by students enrolling in those courses and colleges with approved special fees. Fees for these courses and colleges will be indicated in the semester Class Schedule.

Tuition Waivers

If an employee, spouse of an employee or cooperating agency waiver is used for payment of tuition and/or fees, the properly completed and signed waiver must be received by the Accounts Receivable office by the first day of the term. Late waivers will not be accepted.

Financial Holds

A student failing to pay fees, charges, fines, penalties, deposits or short term loans as prescribed by the Trustees of the University of Wyoming shall be denied registration at the university and copies of academic transcripts and/or diplomas until such fees, charges, fines, penalties, deposits or short term loans are paid in full. A ten-day wait is required before a student loan hold can be removed if the debt is paid with a personal check. Contact Accounts Receivable or the Student Financial Operations Office in Knight Hall for information regarding financial holds.

Summer Session 2010

Please refer to the *2010 Summer Bulletin* for rates and applicable deadlines.

Refunds/Cancellations

Tuition and course fees will be canceled or refunded to a student who officially drops a class or classes, withdraws from the university through the Dean of Students office, or changes enrollment status (i.e. non-resident to resident; full-time to part-time) in accordance with the institutional refund policy outlined below.

No tuition penalty will be assessed for dropping and adding during the drop period identified in the term's class schedule unless all classes are dropped or an all-school withdrawal is processed. Students who withdraw from individual courses after the end of the drop/add period will have their charges canceled in accordance with the institutional refund policy outlined below.

Mandatory fees, late registration fees, or service fees are not refundable.

The portion of tuition refund/cancellation is computed from the first day of the term, not class meeting pattern. If a student's initial registration includes blocked classes or short courses that begin at a later date, the refund/cancellation will still be computed from the first day of the term. If a student's initial registration occurs during an approved late registration period, the date for computing a refund/cancellation will be the first day of the term.

Institutional Refund Schedule

Before first day of semester	100%
Semester Class Day 1-8	100%
Semester Class Day 9-15	80%
Semester Class Day 16-20	70%
Semester Class Day 21-25	60%
Semester Class Day 26-30	50%
Semester Class Day 31-35	40%
Semester Class Day 36 on	0%

Examples of these calculations are available in Accounts Receivable.

The refund schedule for Outreach School courses may vary; see the Outreach School course schedule for current dates.

Financial Aid Federal Return of Funds Policy

A student who receives federal financial aid (other than Federal Work Study pay checks) and chooses to complete less than 60% of an academic term is considered not to have earned all the federal aid he or she has been awarded.

- If aid already disbursed is equal to earned aid, no further action is required.
- If aid already disbursed is less than earned aid, additional aid may be offered to the student after he or she withdraws.
- If aid already disbursed is greater than earned aid, UW and/or the student must return some federal funds.

To determine whether federal funds have been earned or must be returned, UW follows this procedure:

1. Determine the percentage of the term the student completed. This is calculated by dividing the number of calendar days (including weekends) in a term into the number of calendar days that the student was in attendance for that term.
2. Apply the percentage of time attended to the total amount of federal aid the student was eligible to receive for the term. This is the student's "earned aid."
3. Subtract the amount of earned aid from the amount of aid actually disbursed to the student. A positive remainder is the student's "unearned aid." A negative remainder is the student's "earned aid" that may still be offered to the student.
4. Determine the amount of unearned aid remaining that must be repaid by the student. Subtract the amount of unearned aid repaid by the institution from the total amount of unearned aid.

All unearned aid will be returned to the federal student loan lender or federal aid accounts in the following order: (1) Unsubsidized Stafford Loan; (2) Subsidized Student Loan; (3) Federal Perkins Loan; (4) Federal PLUS (Parent) Loan; (5) Federal Pell Grant; (6) ACG-Smart; (7) Federal SEOG Grant. Any amount owed by the student on a grant will be reduced by 50%.

The date of a student's withdrawal from UW will be the date of the student's notification to the Office of Student Life of an intent to withdraw. When a student fails to officially withdraw from UW, it will be assumed that the withdrawal date is the midpoint of the semester or the last date of documented academic activity.

UW will repay the lesser of (1) the total amount of unearned aid or (2) an amount equal to the student's institutional charges multiplied by the percentage of unearned aid. "Institutional charges" is defined as charges for tuition and fees, plus room and board charges for students living in UW residence halls and apartments. It does not include such charges as bookstore charges, student health insurance premiums, parking citations, or library fines.

The amount of unearned aid owed by the student on a loan may be repaid under the normal repayment terms of the loan. The amount of unearned aid owed by the student on a grant must be repaid immediately.

Any amount of earned aid not yet disbursed to the student will be offered to the student. Such offers will cover any undisbursed grants first, followed by the undisbursed loans.

Examples of how the amount of unearned federal aid a student must return is calculated are available from a professional adviser in the office of Student Financial Aid. A chart detailing the percentage of earned and unearned aid, by calendar day of the semester, is provided in the term's class schedule. In brief, to determine the percentage of earned federal aid, the calculation will use the total number of calendar days in the term divided by the total number of calendar days the student attended.

Interaction of Federal Return of Funds Policy and Institutional Refund Policy

When a student who receives federal financial aid withdraws from the university, he or she may owe a repayment of federal funds and/or be due a refund from UW or owe an additional amount to UW. The Federal Return of Funds policy will be applied before any refund due under the UW policy is disbursed. For details on the application of these policies to a specific situation, please consult with the Accounts Receivable Office, 250 Knight Hall, (307) 766-6232.

Student WyoOne ID Cards

28 Knight Hall, (307) 766-5268

ID cards are issued to all students during their first semester of enrollment. These cards are used throughout the student's entire career at the university.

The ID card, also referred to as the WyoOne card, is needed to pick up transcripts, financial aid, cash checks, access student health services, attend athletic events, enter recreation facilities, check out library books and materials, food service access, enter residence halls, and other necessities. Visit the online card office at uwadmnweb.uwyo.edu/idoffice/ to make deposits, view transaction history, and access other card management features.

The WyoOne card may also be used as a debit card to make purchases on campus after the deposit account is established. Spouses, domestic partners and dependents of students are eligible for an ID card.

Credit Available to Undergraduate Students

The University of Wyoming offers credit towards an undergraduate degree through:

I. University of Wyoming Credit Instructed Classes

Courses are offered on campus and at Outreach School settings around the state, including recognized academic courses under faculty general supervision such as internships, clerkships, clinical experience, co-op programs, etc.

Correspondence Study

A maximum of 24 semester hours may be earned by correspondence study courses regardless of where the credit is earned. Correspondence study courses taken by postbaccalaureate students will appear on the transcript but will not be included in cumulative hours earned, as correspondence study credit is not applicable toward a postbaccalaureate degree.

Credit by Examination

While there is no maximum placed on the amount of credit earned by examination, credit so earned does not count in fulfilling the residency requirement of 30 hours of upper division University of Wyoming on-campus, Outreach School, or correspondence study credit.

Students showing proficiency by passing examinations such as the College Entrance Examination Board Advanced Placement Program (CEEB-APP or AP), or American College Testing-Proficiency Examination Program (ACT-PEP), for example, or examinations developed by University of Wyoming departments may earn college credit through the level of demonstrated proficiency. Credit may be allowed on the basis of any testing procedure acceptable to any department, which may include tests of the AP program and both the general and subject (specific) examinations of the College Level Examination Program (CLEP).

A student may not earn credit by examination in a course if the student has completed a course in the subject matter area above the level of the course for which the examination is sought. However, at the discretion of the departments involved, during the drop/add period a student may challenge a lower-level course while enrolled in a higher-level course in the same subject matter area, if the course challenged is a prerequisite for the course in which the student is currently enrolled.

An examination of an appropriate type and content for the credit sought may be conducted to determine if the applicant's proficiency is equivalent to that which could be expected upon completion of a college-level course in the subject. An applicant found to have this level of proficiency will be awarded credit for that course and allowed to proceed either with more advanced courses or with courses in other areas.

Information concerning credit by examination can be obtained by contacting the Office of the Registrar.

Options include:

- Specific departmental course examinations
- Subject CLEP tests
- AP tests
- ACT-PEP tests
- International Baccalaureate (IB)

Eligible students who pay the testing fee of \$80.00 may not be denied an examination in the introductory undergraduate course in any department, if such an examination exists. "Introductory course" is interpreted as that course which is prerequisite for successive courses in the department. Additional fees for examinations offered by testing agencies other than the University of Wyoming are determined by the agency concerned.

Grades of S or U (satisfactory/unsatisfactory) are given in all examinations. Credit by examination is not included in the student's grade point average; it is, however, included in the hours earned toward graduation. The grade of S is the equivalent of C or better. See below for specific subject requirements. Entry on the student's academic record for credit by examination is made only if a grade of S is obtained and is noted as a grade obtained by examination.

To qualify for undergraduate credit, the student must be currently registered, after the drop/add period, at the University of Wyoming as a degree candidate. The student must also be able to demonstrate to the satisfaction of the chair of the department involved that background experience has prepared him or her to attempt a challenge examination if such an examination is sought. The department chair's decision will be based upon existing departmental constraints such as accreditation, graduation requirements, and program requirements.

The use of credit by examination, or credit for prior learning, in graduate programs is to be determined by the student's consulting committee in conjunction with the dean of the Graduate School.

A student may not be allowed credit by examination in a course in which the student is currently or was previously enrolled either for credit or as a visitor or auditor, except that credit by examination may be used as a means to obtain credit for courses previously taken at institutions from which credit is nontransferable. A student may not challenge equivalent courses.

Advanced Placement (AP) Information

Subject	Acceptable Score	UW Course Number(s)/ Title(s), Semester Credit Hours
Art History	4+	ART 2020 (3), Art History II
Biology	4, or 5	LIFE 1010 (4), General Biology
Calculus AB	3, 4, or 5	MATH 2200 (4), Calculus I
Calculus BC	3, 4, or 5	MATH 2200, 2205 (8), Calculus I and II
Chemistry	4 or 5	CHEM 1020, 1030 (8), General Chemistry I and II
Computer Science A	4	COSC 1010 (4), Intro to Computer Science I
Computer Science A	5	COSC 1010, 1030 (9), Intro to Computer Science I, Computer Science I
Computer Science AB	4 or 5	COSC 1010, 1030 (8), Intro to Computer Science I and II
Environmental Science	3, 4, or 5	ENR 1100 (2), Env. & Natural Resource Problems & Policies

Subject	Acceptable Score	UW Course Number(s)/ Title(s), Semester Credit Hours
Economics, Micro	4 or 5	ECON 1020 (3), Principles of Microeconomics
Economics, Maco	4 or 5	ECON 1010 (3), Principles of Macroeconomics
European History	3, 4, or 5	HIST 1120 (3), Western Civ. II
French Language	3	FREN 1010 (4), 1st yr. French I
French Language	4	FREN 1010, 1020 (8), 1st yr. French I and II
French Language	5	FREN 1010, 1020, 2010 (12), 1st yr. French I, II, 2nd yr. French I
French Literature	3	FREN 2140 (3), Intro to Reading
German Language	3	GERM 1010 (4)m 1st yr German I
German Language	4	GERM 1010, 1020 (8), 1st yr. German I and II
German Language	5	GERM 1010, 1020, 2030 (12), 1st yr German I, II, 2nd yr. German I
Government and Politics	3, 4, or 5	POLS 0000 (3) (fulfills the US Constitution requirement; eligible to take the one-hour Wyoming Constitution exam)
Government Comp.	3, 4, or 5	UNST GOV (3), Comparative Government Credit
Human Geography	4 or 5	GEOG 1020 (3), Intro to Human Geography
Language & Composition	4 or 5	ENGL 1010 (3), English Composition*
Latin Literature	3	LATN 1010 (4), 1st yr. Latin I
Latin Literature	4	LATN 1010, 1020 (8), 1st yr. Latin I, II
Latin Literature	5	Latin 1010, 1020, 2030 (12), 1st yr. Latin I, II, 2nd yr. Latin I
Literature & Composition	4 or 5	ENGL 1010 (3), English Composition
Physics B	4 or 5	PHYS 1310 (4), College Physics I
Physics C	4 or 5	PHYS 1310, 1320 (8), College Physics I and II
Psychology	3, 4, or 5	PSYC 1000 (3), General Psychology
Spanish Language	3	SPAN 1010 (4), 1st yr. Spanish I
Spanish Language	4	SPAN 1010, 1020 (8), 1st yr. Spanish I and II
Spanish Language	5	SPAN 1010, 1020, 2030 (12), 1st yr. Spanish I, II, 2nd yr. Spanish I
Statistics	3+	STAT 2050 (4), Fund of Statistics
U.S. History	4 or 5	HIST 1210, 1220 (6), US History I and II
World History	4	HIST 1330 (3), World Civ. from 1450
World History	5	HIST 1330, 1320 (6), World Civilizations to 1450 and from 1450

*Credit is available for either Language & Composition or Literature and Composition, not both.

College Level Examination Prep (CLEP) Information

Subject	Acceptable Score	UW Course Number(s)/ Title(s), Semester Credit Hours
Algebra, Principles of	50 or above	MATH 1450 (5), Algebra and Trigonometry
Algebra	50 or above	MATH 1400 (3), College Algebra
American Government	50 or above	Consult with Department of Political Science
American History I	50 or above	HIST 1210 (3) US History I
American History II	50 or above	POLS 0000 (3), (fulfills US Constitution requirement, eligible to take the one-hour Wyoming Constitution exam)
Analyzing Literature	50 or above	USP CH (3)
Art of the Western World	50 or above	ART 1010 (3)
Biology	50 or above	LIFE 1010 (4), General Biology
Business Law, General	50 or above	BADM 1040 (3)
Calculus w/ Elem Functions	50 or above	MATH 2200 (4), Calculus I
Chemistry	50 or above	CHEM 1020 (4), Gen. Chemistry I
Educational Psychology	50 or above	3 hours of general transfer credit
Ethics in America	50 or above	USP CH (3)
French	41 to 49	FREN 1010 (4), 1st yr. French I
French	50 to 56	FREN 1010, 1020 (8), 1st yr. French I and II
French	57 or above	FREN 1010, 1020, 2030 (12), 1st yr. French I, II, 2nd yr. French I
German	40 to 47	GERM 1010 (4), 1st yr. German I
German	48 to 53	GERM 1010, 1020 (8), 1st yr. German I and II
German	54 or above	GERM 1010, 1020, 2030 (12), 1st yr. German I, II, 2nd yr. German I
History of the U.S. I	50 or above	HIST 1210 (3), United States History I
History of the U.S. II	50 or above	HIST 1220 (3), United States History II
History of the Vietnam War	53 or above	3 hours of history elective credit
Human Growth & Development	50 or above	Consult with the Department of Zoology and Physiology
Humanities	50 or above	ENGL 2130 (3), Creative Impulse
Intro to Educational Psychology	47 or above	3 hours of general transfer credit
Intro to Sociology	47 or above	SOC 1000 (3), Sociological Principles
Literature	50 or above	USP CH course (3)
Macroeconomics	50 or above	ECON 1010 (3), Principles of Macroeconomics
Pre-Calculus	61 or above	MATH 1450 (5), Algebra & Trigonometry
Principles of Management	50 or above	MGT 3210 (3), Management & Organization
Principles of Marketing	50 or above	MKT 3210 (3), Intro to Marketing

Subject	Acceptable Score	UW Course Number(s)/ Title(s), Semester Credit Hours
Principles of Microeconomics	50 or above	MKT 3210 (3), Intro to Marketing or ECON 1020 (3), Prin. of Microecon.
Psychology	50 or above	PSYC 1000 (3), General Psychology
Spanish	41 to 49	SPAN 1010 (4), 1st yr. Spanish I
Spanish	50 to 53	SPAN 1010, 1020 (8), 1st yr. Spanish I and II
Spanish	54 or above	SPAN 1010, 1020, 2030 (12), 1st yr. Spanish I, II, 2nd yr. Spanish I
Statistics	48 or above	STAT 2070 (4), Intro to Statistics for Social Sciences
Sociology	56 or above	SOC 1000 (3), Sociological Principles
Trigonometry	54 or above	MATH 1405 (3), Trigonometry
Western Civ. I	50 or above	HIST 1110 (3), Western Civilization I
Western Civ. II	50 or above	HIST 1120 (3), Western Civilization II

International Baccalaureate (IB)

Subject	Acceptable Score	UW Course Number(s)/ Title(s), Semester Credit Hours
Adv. Math Subsid Level	4+	MATH 2200, 2205 (8), Calculus I and II
Anthropology HL-Fld Res.	4+	ANTH 3310 (3) Intro to Anthropology Research Methods
Soc. Anthropology HL-Theory	4+	ANTH 3410 (3), Patterns of Subsistence
Soc. Anthropology SL	4+	ANTH 1200 (3), Intro to Cultural Anthropology
Art/Design HL	4	ART 1000 (3), General Art Studio ART 1010 (3), General Art History
Biology HL	4+	LIFE 1010 (4), General Biology
Biology SL	4+	LIFE 1000 (4), Principles of Biology
Chemistry HL	4	CHEM 1020 (4), Gen. Chemistry I
Chemistry HL	5+	CHEM 1020 (4), Gen. Chemistry I CHEM 1030 (4), Gen. Chemistry II
Chemistry SL	5+	CHEM 1000 (4), Intro. Chemistry
Computer Science HL	4+	COSC 1010, 1030 (8), Intro to Computer Science I and II
Computer Science SL	4+	COSC 1010 (4), Intro to Computer Science I
Economics HL	4+	ECON 1000 (4), Global Econ. Issues
Economics HL	5+	ECON 1010(3), Principles of Macroeconomics; ECON 1020 (3), Principles of Microeconomics
Economics SL	4+	ECON 1000 (4), Global Econ. Issues
English HL	4+	ENGL 1010 (3), English Comp I
Environmental Systems	4+	LIFE 2400 (3), General Ecology

Subject	Acceptable Score	UW Course Number(s)/ Title(s), Semester Credit Hours
French Language	4	FREN 1010 (4), 1st yr. French
French Language	5	FREN 1010, 1020 (8) 1st yr. French I and II
French Language	6/7	FREN 1010, 1020, 2030 (12), 1st yr. French I, II, 2nd yr. French I
German Language	4	Germ 1010 (4) 1st yr. German I
German Language	5	Germ 1010, 1020 (8), 1st yr. German I and II
German Language	6/7	GERM 1010, 1020, 2030 (12), 1st yr. German I, II, 2nd yr. German I
History - American HL	4	HIST 1210, 1220 (6), US History I and II
History-European	4+	UNST CS (3), Cultural Context Social Science
Math Methods/ Math SL	4	MATH 1450 (5), Algebra & Trigonometry
Math HL	4	MATH 2200, 2205 (8), Calculus I and II
Math Studies	4+	UNST QA (3), Quantitative Reasoning I
Music HL	4	Music 1000 (3), Intro to Music
Music Theory SL	4+	Music 1000 (3), Intro to Music
Philosophy HL	4+	3 hours of general transfer credit
Physics HL	4	PHYS 1110, 1120 (8), General Physics I and II
Physics SL	4+	4 hours of General Credit
Psychology SL	4+	PSYC 1000 (3), General Psychology
Russian Language	4	RUSS 1010 (4), 1st yr. Russian I
Russian Language	5	RUSS 1010, 1020 (8), 1st yr. Russian I and II
Russian Language	6/7	RUSS 1010, 1020, 2030 (12), 1st yr. Russian I, II, 2nd yr. Russian I
Spanish Language	4	SPAN 1010 (4), 1st yr. Spanish I
Spanish Language	5	SPAN 1010, 1020 (8), 1st yr. Spanish I and II
Spanish Language	6/7	SPAN 1010, 1020, 2030 (12), 1st yr. Spanish I, II, 2nd yr. Spanish I
Theatre Studies HL	4+	THEA 1000 (3), Intro to Theatre
Theory of Knowledge	B or A	3 hours of USP CH credit
Performance/ Theatre Prod. HL	4+	THEA 2050 (3), Theatre Practice
Visual Art HL	4	ART 1000, 1010 (6), General Art: Studio, History
Visual Art SL	4+	ART EL (12), Art Elective, USP CA

Portfolio Evaluations

Portfolio evaluations. In recognition of factors in our society that produce great individual differences in backgrounds and preparation of students entering the university, the university has developed various options to assess extra-institutional college-level learning. To qualify for undergraduate credit, the student must be currently registered at the University of Wyoming as a degree candidate.

Credit based on faculty evaluation of the kinds and extent of college-level learning which an applicant has acquired in prior extra-institutional settings, evidenced in a portfolio of documentation, may count toward university undergraduate graduation requirements. In such event, the student's degree program can be enriched by freeing time needed to take additional courses, or accelerated to earn the baccalaureate degree earlier and commence postgraduate studies sooner.

The number of credit hours able to be earned by means of a portfolio evaluation is normally limited to 12. Such credit, when awarded, shall be for specific University of Wyoming content-oriented courses (rather than given as X number of hours of credit in a general discipline area), following the college course model of assessment as defined by the Council for Adult and Experiential Learning. Portfolio assessment, when used, will be conducted by a committee of appropriate tenured faculty including at least one member with the academic rank of professor. *All credit assigned for experiential learning based upon portfolio evaluations is excluded from the minimum credit hour requirements as set forth in the university requirements.*

II. Transfer Credit

Transfer credit includes college courses accepted from other accredited colleges or universities, including Wyoming community colleges. Such course work must be considered equivalent or comparable to course work required by the University of Wyoming. The university accepts only academic courses in the study of religion similar to those offered by the Religious Studies Program in the College of Arts and Sciences.

Students transferring to UW must have the registrar or records office of the previous school(s) send an official transcript to the University of Wyoming Admissions Office. Once all final transcripts have been received by the Admissions Office, the degree analysts in the Office of the Registrar will provide each student with a complete listing of all courses that transfer to UW.

Evaluations are not accomplished for students working toward a Second Bachelor's Degree. Second Bachelor's students should consult with their adviser concerning the applicability of transfer work to their UW degree program.

The recording of credit does not automatically imply acceptance toward a degree since degree requirements vary from major to major. Acceptance of credit toward a major is dependent upon final approval by the student's academic adviser. Questions concerning the transferability of course work from other institutions should be directed to the Office of the Registrar.

The *Wyoming Higher Education Course Transfer Guide* publication lists those Wyoming community college courses which transfer to the University of Wyoming. The transfer guide is distributed to community college advisers throughout the state and is also available online through the UW Outreach School's web site. Wyoming Community college students intending to transfer to the University of Wyoming are encouraged to meet with their advisers and consult the transfer guide and UW *General Bulletin* when planning their program of study.

Wyoming Community College Articulation Agreement

Students entering UW beginning fall 2001 and who have completed an AA, AS, or AB degree from a Wyoming Community College (spring 2001 or later) receive credit toward completion of the lower division general education requirements included in the University Studies Program. Two types of graduates are addressed in this agreement:

1. All Wyoming community college graduates (AA, AS, or AB degree) who have completed the prescribed thirty (30) credit hour Wyoming community college Common General Education Core and, **in addition, a second three (3) credit hour college-level math course**, will be deemed to have met UW's lower-division general education requirements.
2. All Wyoming community college graduates (AA, AS, or AB degree) who have completed the prescribed thirty (30) credit hour Wyoming community college Common General Education Core, **but who lack the second three (3) credit hour college-level math course** will be required to complete the second mathematics course either at the community college or at the University before they will be deemed to have met UW's lower-division general education requirements.

This articulation agreement applies to *graduates* receiving an Associate of Arts, an Associate of Sciences, or an Associates of Business degree from any of the seven Wyoming Community Colleges spring 2001 or later. All graduates with an AA, AS, or AB degree complete a minimum of 64 college-level credits with a minimum of 2.0 GPA.

Nontraditional credits awarded by another institution will not normally be accepted by the University of Wyoming. They may be validated by departmental exam within the faculty regulations allowing for such examinations. Credits awarded at other institutions based on ACT or SAT scores or College Level Examination Program (CLEP) general examinations will not be accepted as transfer credit.

Colorado Community College Articulation Agreement

A Colorado Community College Articulation Agreement is under development. For more information, please contact Academic Affairs.

Graduates of Pikes Peak Community College (spring n2008 or later) are awarded the lower-division general education core in the same manner as graduates of Wyoming community colleges, with the exception of the UW/WY Government and Constitutions requirement. Students must complete the Wyoming component through coursework or the challenge exam.

III. Military Service Courses

Students who have served in the Armed Forces may be allowed transfer credit for courses taken in some military schools. Students who desire to apply for credit on the basis of their military schooling should submit a copy of their DD-214 form or AARTS/SMART transcript (or its equivalent) to the UW Admissions Office. The degree analysts in the Office of the Registrar determine whether the course work is transferable to UW. Evaluations for the granting of credit for military-based training are based on recommendations in the American Council of Education (ACE) guidelines. Individual colleges will determine whether such course work is applicable to their degree programs.

The university will accept college-level correspondence credit taken through the United States Armed Forces Institute in accordance with the same regulations that govern students taking correspondence work through the University of Wyoming Outreach School.

The Grading System

Students are evaluated according to the following grading system:

Grade	Pts.	Definition
A	4	Exceptional
B	3	Very good
C	2	Fair
D	1	Poor
F	0	Failure (may be assigned as a grade for failure to attend or to indicate failure to formally withdraw)
I		Incomplete (temporary mark pending coursework completion as agreed in a signed document). See section on incompletes below for details.
W		Withdrawal (from the individual course or all courses), only if the student follows the official withdrawal procedure. If a student enrolls in a course and then abandons it (stops attending) without following the official withdrawal procedure, a grade of F will be assigned.
S		Satisfactory (equivalent to a C or better [B or better in courses numbered 5000 or above]; see general information on S/U grading below)
U		Unsatisfactory (see general information on S/U grading below)
P		Passing (equivalent to a C or better, for midterm grades only)
UK		Unable to compute grades (for midterm grades only)

Grade Points

Each letter-graded course carries grade point value computed as: the total credit hours earned in the course multiplied by the point value of the letter grade earned. For example: a student earning an A (point value of 4) in a 3 credit-hour course would earn 12 grade points for the course.

Semester (or Term) Grade Point Average

The semester grade point average (GPA) is the sum of all grade points earned in a semester or term divided by all credit hours attempted for letter grade. Credit hours in courses in which marks of I, W, S, or U were assigned, as well as developmental courses, are excluded.

Cumulative Grade Point Average

The average of all grades earned by a student as outlined below is termed the cumulative grade point average. It is used for determining activity eligibility, honors, probation, suspension, graduation, and for all comparisons or purposes requiring measurement of academic standing.

The cumulative grade point average is defined as the sum of all grade points earned in University of Wyoming residence, correspondence, or the Outreach School, divided by all credit hours attempted for letter grade, with the following exceptions:

1. The credit hours shall not be counted in courses in which marks of W, S, or U were assigned, or in which marks of I (for incomplete) are still in effect.
2. For repeated courses:

- a. First repeat: only the second credit and grade is used to calculate the cumulative grade point average.
 - b. If repeated more than once, only the last credit and grade earned is used to calculate the cumulative grade point average.
 - c. A student is limited to a maximum of three (3) attempts in any course at the University of Wyoming.
 - d. If a mark of W, S, or U is assigned in a repeated course, the previous grade assigned will stand except when an S or U is earned repeating a previous S or U.
 - e. Courses applied towards one completed degree may be repeated as part of a second degree; however, the grade and grade point average in the original degree will not be changed.
3. Transfer grades are not counted in the UW grade point average. If a course taken at UW is repeated for the first time at another institution, the credits and grade earned at UW will be deleted from computation of the UW cumulative grade point average if credit for the repeated course is transferred to UW.
 4. For graduate students, courses numbered below 4000 are not added in to the semester and cumulative totals, nor computed into the GPA.

Incompletes (I)

A grade of "I" (incomplete) is a temporary grade assigned in those rare instances when no other mark will insure justice to the student. It may be awarded only if the class instructor has approved a petition to be filed prior to grade submission by the instructor to the Registrar at the end of the term in which the student was enrolled in the class. (UW Regulation 6-720)

Time allowed for completing course requirements will normally not exceed 120 calendar days beyond the end of the semester in which the I was given. The dean of a college may designate certain research courses where the 120-day limit may be extended by the instructor; however, the completion date even in these courses should not be later than the time of graduation for the student unless the student is reserving the particular course for graduate credit (with the approval of the Graduate School dean).

If the final grade for the course is not received in the Office of the Registrar by the date indicated on the authorization, the I will revert to an F. Should graduation occur in the interim, the I can stand permanently or it can still be completed within the specified deadline, but the student's GPA at graduation with all associated honors will stand as computed.

General Information on S/U Grading

The grade of S (satisfactory) is interpreted to include grades A-C and the grade of U (unsatisfactory) to include grades D-F on the conventional grade scale for courses numbered less than 5000 (for courses 5000 or above, the grade of S is interpreted to include grades A and B). Credit hours of S/U courses are counted as hours attempted toward graduation. However, neither the S nor U grade carries grade points and neither will be included in the calculation of the cumulative grade point average.

Students may not take a course for S/U credit to satisfy University Studies Program requirements, unless the course is offered for S/U only; (e.g., POLS 1000, or the equivalent history or economics courses, may not be taken for S/U).

If a mark of S or U is assigned in a repeated course, the previous grade assigned will stand except when an S or U is earned repeating a previous S or U.

Students must signify at the time of registration or schedule modification whether they are taking any course for S/U grades. Faculty will be notified of the student's decision.

The faculties of the various colleges and of the Graduate School shall determine the number of credit hours of S that may be used to satisfy degree requirements in their programs. They may also place restrictions upon the use of S credits to satisfy college or major requirements. In addition, they may designate particular courses in their colleges as courses to be offered for S/U only.

A student who changes majors within a college or who transfers to a different college may petition for the acceptance of S credits previously earned if such credits are in conflict with faculty-established regulations for the new major or college.

Mid-Term Grades

Mid-term grades for all courses numbered below 5000 are to be submitted by instructors on WyoWeb the week following midsemester. Grades which can be assigned by faculty are:

Grade Definition

P	Passing - for students performing at the A, B, or C level
D	Poor
F	Failure (may also be assigned as a grade for failure to attend or to indicate failure to formally withdraw)
S	Satisfactory (equivalent to a C or better) in cases where the class is offered for S/U or the student has elected the S/U option
U	Unsatisfactory (equivalent to a D or F) in cases where the class is offered for S/U or the student had elected the S/U option
UK	Unknown; unable to compute grade

The UK grade may be assigned if, due to lack of performance assessments such as exams, papers, homework, etc., a faculty member is unable to make a determination of a midterm grade.

Please note that the midsemester grade received in any particular class reflects the assessment of student performance during the first portion of the semester only.

Mid-term grades are available on WyoWeb. Any schedule discrepancies should be reported to the registrar's office immediately.

End of Semester Grade Reports

Final grades are available on WyoWeb as soon as possible (usually within five working days) after the close of the semester or term.

Definitions

1. Cumulative semester hours attempted shall be the total of all credit hours attempted through the University of Wyoming, except for credit hours attempted in repeating a course, those in which marks of W were assigned, and those accepted in transfer from other institutions.
2. The cumulative grade point average is defined as the sum of all grade points earned through the University of Wyoming divided by the sum of all credit hours attempted through the university, except for credit hours in which marks of W, S, U, or I are assigned or those of an initial course which has been repeated. When a course has been repeated, only the last grade points and credit hours assigned for repeats of the course shall be entered in the computation of the cumulative grade point average.

Academic Transcripts

Official transcripts of individual academic records at UW are sent from the Office of the Registrar upon written authorization signed by the individual. Individuals may also authorize the release of their academic transcripts through WyoWeb. All financial obligations to the university must be cleared before a transcript may be released or viewed on WyoWeb.

Transcripts are produced on a first-come, first-served basis and one to two business days must be allowed. Individuals are asked to anticipate transcript needs and submit requests to the Office of the Registrar as far in advance as possible. Usually, 10-15 days are needed at the close of a semester to record semester grades and issue transcripts. For fax service, there is a charge of \$10.00 per transcript; please allow 3-5 business days. Same-day transcript service is available for a \$10 fee (limit of 2 transcripts).

Partial transcripts are not issued. Each transcript includes the complete academic record at the University of Wyoming and the number of credits from other institutions accepted by UW.

Official transcripts of credit earned at other institutions which have been presented for admission or evaluation of credit become the property of the University of Wyoming and are not reissued or copied for distribution. This includes high school records and any other type of supporting documents. Transcripts of work completed at other institutions should be obtained directly from the issuing institution.

Applicability of transfer credit toward any degree is dependent on the curriculum pursued by the student.

In preparing transcripts for graduate students or second bachelor's degree candidates whose undergraduate work was taken elsewhere, the University of Wyoming includes on its transcripts no detailed reference to that undergraduate work, mention being limited to designation of the degree and date received and the name of the institution granting the degree.

Honor Roll

Undergraduate and law students who achieve high scholastic grades are honored by being placed on the President's Honor Roll, the academic Dean's Honor Roll, or the Vice President for Academic Affairs' Honor Roll.

The requirements to be met to attain these honors are:

For President's or Dean's Honor Roll:

1. Undergraduate students must complete a minimum of 12 UW semester hours on a basis of A, B, C, D, or F. Exception: if a student is student teaching, the student must be enrolled in a minimum of 12 UW semester hours, at least 7 of which must be graded on the basis of A, B, C, D, or F with no semester grade of I. Courses taken for audit do not count for honor roll purposes.
2. A grade point average of 4.0 for the President's Honor Roll.
3. A grade point average of 3.25 or better for the academic Dean's Freshman Honor Roll.
4. A grade point average of 3.4 or better for the academic Dean's Honor Roll for undergraduates above freshman standing.
5. In the College of Law, students are eligible for the academic Dean's Honor Roll when enrolled in a minimum of 13 UW semester hours of law courses. In the College of Law, a grade point average of 3.25 or better is required for first year students and a grade point average of 3.4 or better is required for second and third-year students for the academic Dean's Honor Roll.
6. Students having consortium agreements with other institutions are not considered to be full-time for honor roll purposes.

For the Vice President for Academic Affairs' Honor Roll:

1. Undergraduate students must complete a minimum of 6 UW semester hours, but fewer than 12 UW semester hours, of which at least 6 UW semester hours must be graded on the basis of A, B, C, D, or F with no semester grade of I. Courses taken for audit do not count for honor roll purposes.
2. A grade point average of 3.5 or better.

Graduate Students

Students in the Graduate School are not eligible for the President's Honor Roll, the academic Dean's Honor Roll, or the Vice President for Academic Affairs' Honor Roll.

Academic Probation and Suspension Undergraduate Students

Academic Status

In order to graduate, every student is expected to maintain satisfactory academic progress, which is based on scholastic performance. Current academic status will be indicated on internal documents and grade reports as:

- good standing
- academic probation
- academic suspension: normally not eligible to petition for reinstatement until one full semester, exclusive of summer term, has elapsed. The dean of the college in which a suspended person wishes to continue may waive the four-month delay if the dean is assured that the person has made suitable progress toward resolving the academic deficiencies.

Undergraduate Academic Probation

1. Academic probation shall constitute notice that a student is not progressing satisfactorily toward the bachelor's degree or Pharm.D.
2. A student enrolled at the University shall be placed on academic probation at the end of the semester or summer term when his/her cumulative grade point average at UW falls below a 2.00.
3. A student placed on scholastic probation will be so notified by letter. This information is also available on WyoWeb.
4. A student shall be removed from scholastic probation at the end of the semester or summer term in which his/her cumulative grade point average is 2.00 or above.
5. Students who fail to remove themselves from probation or earn a semester grade point average below 2.0 in the next semester or summer term attempted will be suspended from the university for not maintaining the criteria for satisfactory academic progress. Students on probation who register for a semester or summer term and then withdraw from that semester or term will be suspended, as it is considered an attempted semester or term.

Undergraduate Academic Suspension

1. Academic suspension shall constitute notice to a student that his/her enrollment in the University of Wyoming has been terminated because of unsatisfactory progress toward the bachelor's degree.
2. A student who is suspended for unsatisfactory academic performance should not be permitted to petition for reinstatement until one full semester, exclusive of summer term, has elapsed. Students may petition once per semester for reinstatement, and, if denied by any college or the Center for Advising and Career Services, cannot petition for reinstatement until the next fall or spring semester, unless there are documented extenuating circumstances justifying immediate reinstatement.
3. A suspended student may not enroll for any University of Wyoming credit classes (including on-campus, online, correspondence, and outreach).
4. Credit earned at another accredited college or university while a student is suspended from the University may be accepted under the usual regulations governing the transfer of credit after the student has been reinstated.
5. A student placed on academic suspension will be so notified by letter.

Undergraduate Academic Reinstatement

1. A college may have an academic reinstatement policy that is more restrictive than the general university policy.
2. Academic reinstatement shall constitute notice that a suspended student has been reinstated to the University, and is eligible to be considered for readmission. The reinstated student shall be on scholastic probation during his/her first semester or summer term of reinstatement after which he/she may be removed from this probation.
3. A petition for reinstatement must be submitted no later than 15 days before the beginning of the semester or summer term in which the student wishes to register. A petition received after this deadline may not be processed until after the regular registration period.
4. The decision on a petition for reinstatement shall be made by the dean (or designee) of the college in which the student wishes to enroll. Undeclared students should contact the Director of the Center for Advising and Career Services. A student who has been reinstated must remain in the college in which he/she has been reinstated for that semester.
5. Students placed on academic suspension are eligible for a maximum of three reinstatements. Any student placed on academic suspension for the fourth time is not eligible for reinstatement for a minimum of five years from the end of the last term of attendance.
6. Students who are suspended as a result of spring semester grades will have the suspension invoked at the beginning of the summer term, excluding any course(s) which had begun prior to the determination of the academic suspension.

Exceptions

Upon the request of a person placed on academic suspension or denied reinstatement, the vice president for academic affairs may review the circumstances and reverse the decision of the dean if the vice president for academic affairs deems it necessary to prevent a gross injustice.

Academic Renewal

An undergraduate student who returns to the university (UW) and who has not completed or withdrawn from a college course at UW (excluding correspondence study courses) during the previous five years will have the option of continuing his or her earlier UW cumulative GPA or commencing a new cumulative GPA under the Academic Renewal policy. An interested student must submit the Academic Renewal Application Form (which may be obtained from the Office of the Registrar) to the registrar no later than ten class days before the last day of classes of the semester in which the student returns to UW.

The entire UW transcript will remain intact. A note indicating the policy will precede the new part of the UW transcript if the student opts for academic renewal. At the discretion of the academic department in which the student is enrolled, credit hours for which the student earned the grade of C or better may be applied toward the completion of the degree requirements. The list of any departmentally-approved courses must be indicated on the Academic Renewal Application Form when initially submitted to the registrar. No further changes may be requested.

A student's GPA and completed courses that were applied to a baccalaureate degree are not eligible for academic renewal.

Graduate students are not eligible for academic renewal.

Graduate Students

A graduate student enrolled at the university shall be placed on academic probation at the end of a semester or summer session when his or her graduate cumulative UW grade point average in 4000-level or higher courses is below 3.0. Students who fail to bring their graduate GPA to 3.0 and remove themselves from probation after one semester or summer session will be suspended from the university. A suspended student may petition the dean of the Graduate School for reinstatement to the same degree program or to another degree program. The dean will consult with the appropriate department head prior to all petition decisions. A reinstated student will be on probation and may be subject to other performance criteria as specified by the dean of the Graduate School in consultation with the department head.

The above GPA requirement is considered to be a minimum requirement. Departments may recommend suspension of students from their degree program based on other performance criteria.

Regulations governing academic probation, suspension, and reinstatement do not apply to students enrolled in the College of Law.

Registration and Enrollment in Courses

Registration Procedures

Eligible students can register, drop, add, and list their courses through WyoWeb. To insure that students have seen an adviser, access numbers for each semester's registration are distributed through the academic advisers. Directions for registration are contained in the appropriate *Class Schedule*. *Class Schedules* are available in the Office of the Registrar and online no later than one week prior to advising week. Students are responsible for following directions and deadlines contained in the *Class Schedules*.

The following categories of continuing students in good standing or on academic probation are eligible to register for the semesters indicated:

1. *For the fall semester:*
 - a. All students who were enrolled the previous fall or spring semester.
 - b. Summer session students cleared by the Admissions Office for fall. (This does not include those admitted for summer only.)
2. *For the spring semester:*

All students who were enrolled the previous spring or fall semester.
3. *For the summer session:*

Students who were enrolled the previous summer, fall, or spring semester.

All other applicants and students should complete admission requirements by the admission deadline. (Refer to the sections on undergraduate and graduate admissions in this bulletin for deadlines.)

All information requested during admission and registration is important to the student and to the university and should be kept accurate and complete. If a student's address, telephone, major, adviser, or other vital information changes after enrollment, the Office of the Registrar should be informed without delay.

Academic Adviser

Academic advising is a decision-making process involving a partnership between the academic adviser and the student (advisee). In this partnership, issues and questions regarding personal, professional, and educational goals are examined and evaluated. This includes, but is not limited to, planning an appropriate course of study and the scheduling of classes.

The purpose of academic advising is to promote rational, informed, and independent choices by the student. To that end, the academic adviser is a significant link for the student to other resources in the university community. Students are expected to take the initiative in developing the adviser-advisee relationship and to assume an ever-increasing role in developing their own academic, career, and personal goals.

Change of Registration

Modification of a course schedule during the drop/add time period is accomplished through WyoWeb. After the end of the drop/add period, individual class withdrawals must be processed on the appropriate form obtained from the Office of the Registrar or its web site. Changes to a student's registration or withdrawals are not official until the required forms are completed and returned to the Office of the Registrar as prescribed.

The period of time allowed for modifying a student's schedule or withdrawing during the summer session or other special terms is established in regulations or by the registrar, subject to the approval of the vice president for academic affairs.

During the fall and/or spring semester(s):

1. *Dropping a class or changing sections:* A student may drop classes or change sections of the same course during the first eight class days of the semester (four class days for blocked courses).
2. *Adding a course or changing grading option:* A student may add classes or change grading options or hours in variable-credit courses during the first ten class days of the semester (five class days for blocked courses).
3. *Withdrawal from a course:* After the designated drop/add period, students may officially withdraw from individual regular term courses until ten class days after mid-semester. They may withdraw from blocked courses until five class days after the middle of the course. A mark of W will be assigned indicating withdrawal.
4. *Withdrawal from the university (termination of enrollment):* A student may terminate all fall or spring semester enrollments if formal procedures are completed through the Dean of Students Office prior to the last 15 calendar days of the semester. A mark of W is assigned to each course, indicating official termination for that semester.

Choice of College and Major

The academic adviser is an excellent source of information about the adviser's professional field for students who have selected a major. Students who are undecided about the selection of a college and/or major and who seek specialized assistance in choosing educational and vocational objectives should contact the Center for Advising and Career Services. These units have programs designed to help the undecided student acquire the tools to make an intelligent decision regarding an appropriate major discipline.

Change of College, Major, or Adviser

Students who wish to change their college, major, or adviser should obtain the appropriate form from either the Office of the Registrar or the office of the dean of the college of their current enrollment. Students wishing to transfer from one college to another must secure the signatures of both their present and future deans. Graduate students need the approval of the Graduate School dean and the head of the department to which the student is transferring. After all appropriate signatures have been obtained, the student should take the form to the Office of the Registrar.

Students who have completed their undergraduate work at the university and who wish to embark upon a graduate program, even through continuing their graduate work in the same field they pursued as undergraduates, will need to apply for graduate admission. (Refer to the section on graduate admission in this bulletin for deadlines.)

Definitions for Student Classifications

Code	Class	Definition by earned hours
FR	Freshman	Under 30 credits
SO	Sophomore	30 but less than 60 credits
JR	Junior	60 but less than 90 credits
SR	Senior	90 or more credits
GR	Graduate Student	
LW1	Law student (professional level) first year	
LW2	Law student (professional level) second year	
LW3	Law student (professional level) third year	
MD1	Medical student (professional level) first year	
PH1	Pharm.D. (professional level) first year (0-33 semester hours)	
PH2	Pharm.D. (professional level) second year (34-69 semester hours)	
PH3	Pharm.D. (professional level) third year (70-104 semester hours)	
PH4	Pharm.D. (professional level) fourth year (105+ semester hours)	

Credit Hour Load

Undergraduates: An average of 15 hours of work each semester is considered a normal load. Maximum credit loads are 20 hours in all colleges. Normally, not more than 12 hours of undergraduate credit may be earned during the summer session. An approved *Overload Petition* form must be filed to exceed these maximums. *Overload Petition* forms are available online or from the Office of the Registrar.

Graduate students: 14 hours of credit is the average and 16 hours the maximum amount of credit allowed per semester for full-time graduate students. A student who has been assigned an assistantship for the academic year is usually restricted to a load of 13 semester hours. Normally, not more than 8 hours of credit may be earned in course work during an eight-week summer session. An approved *Overload Petition* form must be filed to exceed these maximums. *Overload Petition* forms are available online or from the Office of the Registrar.

Auditing a Course

The privilege of non-credit enrollment in a class is available, upon approval of the adviser and the instructor, to any university student. The auditing privilege is subject to the same fee schedule as credit courses. Auditors are expected to attend class regularly and complete such graded work as required by the instructor. It is the responsibility of the student to determine and fulfill the requirements for a satisfactory audit. Though this auditing privilege carries full rights of class participation, it definitely offers no academic credit, does not count toward full- or part-time status, and will result in a mark of satisfactory (SA/S) or unsatisfactory (UA/U). Subsequent credit for the course by special examination is not available.

Graduate Credit for Seniors

Undergraduate students taking graduate-level courses which are not in any way a part of their undergraduate degree have the option of later using such courses for purposes beyond the bachelor's degree requirements. If the student intends to pursue a graduate degree or needs the courses noted on the academic transcript as reserved for graduate credit for job classification (i.e. advancement on teacher salary schedules, etc.) the student should file a petition. The petition should be filed by midterm of the semester which is requested. The petition form is available from the Graduate School. Courses may not be retroactively reserved once a semester has ended.

Repeating a Course

Students may repeat course work; however, credit earned in any given course (or equivalent course) is applicable toward a degree requirement only once. All grade entries remain on the student's record, but only the last grade earned will be calculated in the UW cumulative grade point average. Refer to the Cumulative Grade Point Average section of this bulletin for further information. Variable-credit courses are not considered as repeats unless the department head provides written certification that the course content was, in fact, repeated. Courses repeated will remain as entries on the academic transcript. Courses applied towards one completed degree may be repeated as part of a second degree; however, the grade and grade point average in the original degree will not be changed. A student is limited to a maximum of three (3) attempts in any course at the University of Wyoming. An "attempt" includes any instance in which the student earns a grade for the course or withdraws from the course. The three-attempt limit does not apply to courses identified in the General or Graduate Bulletin as being appropriate for students to take multiple times. A student can petition for exceptions to this limitation through established university procedures (UW Regulation 8-238).

Class Attendance

Each student shall attend the lectures, recitations, and laboratories, and participate in field work deemed necessary to adequately fulfill the academic requirements of each course. Each instructor, at the beginning of every semester, shall stipulate the attendance policy necessary for satisfactory completion of the course.

The Dean of Students Office may issue authorized absences for participation in university-sponsored activities and for other unusual circumstances. If students have been hospitalized, or if they have been directed by the Student Health Service or their private physician to stay at their place of residence because of illness, the Student Health Service or their private physician may issue a statement giving the dates of the student's confinement which the student may show to the instructor without verification from the Dean of Students Office.

All instructors shall permit students who have official authorized absences to make up missed course work without penalty. An authorized absence, however, merely gives the individual who missed the class an opportunity to make up the work and in no way excuses him or her from the work required.

Withdrawal from the University (Termination of Enrollment)

Withdrawal from the university is the official termination of student status prior to the end of a term. Students wishing to withdraw from all on-campus classes should initiate the procedure with the Dean of Students Office. Withdrawal from the university is not permitted during the last 15 days of a term.

After clearing with the Dean of Students Office, the withdrawal form must be presented to the university cashier for initial processing. The Office of the Registrar will report withdrawals to instructors concerned.

Students withdrawing from Outreach courses should contact the Outreach School.

Course Withdrawal

Students wishing to withdraw from some but not all course work can obtain the required forms from the Office of the Registrar or its web site. See the Change of Registration section on preceding pages for deadlines.

A class withdrawal is not official unless filed with the Office of the Registrar. Unauthorized discontinuance of enrollment or unofficial abandonment of classes will result in a failing grade.

Academic Dishonesty

Whatever form academic dishonesty may take, the university community regards it as a serious offense. An act is academically dishonest when, and only when, it is an act attempted or performed in order to misrepresent one's involvement in an academic task in any way. Such conduct will result in imposition of sanctions pursuant to University Regulations.

It is the responsibility of both the student and person in charge of an academic task, respectively, to make reasonable efforts to learn of, or make known, the expectations and standards of conduct required in the perfor-

Graduation Requirements and Procedures

Graduation Requirements

Students are personally responsible for knowing degree requirements and enrolling in courses that fulfill their degree program. Students, with the help of their advisers, design their program to satisfy their needs and aims. Students will be required to complete assessment activities as determined by the university prior to the awarding of degrees. Students are likewise held responsible for knowing regulations governing the standard of work required for continuance in the university involving academic probation and suspension.

Although this bulletin is intended to set forth the various provisions for study and requirements for the awarding of degrees, periodic revisions of the provisions for study and degree requirements are appropriate (because of advances in knowledge, changes in occupational requirements, academic preparation of students, and in faculty and facilities at the university). In order for the bulletin to be available in spring of each year, publication must begin the previous October. This is almost a year before the requirements specified therein become effective the following fall and almost five years before a student entering at that time could graduate. Accordingly, the university cannot guarantee the awarding of a degree based on the unchanged requirements as set forth in a particular bulletin.

Adjustment to Changing Requirements

Students are expected to inform themselves of changes in degree requirements by reviewing the bulletins that are published annually and their CAPP degree progress reports; then, when necessary, adjust their degree plans accordingly.

If university or college requirements are changed, students are encouraged to adopt the new requirements; however, students will have the option of graduating under the requirements in effect when they entered the university or one of Wyoming's community colleges, provided the courses are still available. The student must accept either the new requirements or the requirements in effect when they entered the university or one of Wyoming's community colleges in their entirety, not a combination from each. Students changing colleges within the university or reentering the university after one or more years away are expected to adopt the requirements in effect at the time of the reentry. Any substitution to the above must be approved in writing by the student's adviser and the college dean and added to the student's advising folder in the department or college.

If departmental requirements are changed, students will ordinarily be permitted to continue under the requirements in effect when they entered that major department provided there has not been an interruption in their education for a year or more; however, students are encouraged to adopt the new requirements in total, or to accept, with the written approval of the student's adviser within the department, those of the new requirements which would not be an undue hardship. Notice of changes will be available from departmental offices and advisers. It is the responsibility of students to keep in touch with their major departments, to learn of changes in requirements, and to plan ahead so that necessary courses can be taken by the expected time of completing a degree. Many courses are not given every semester and some not every year.

If required prerequisites for a course are changed, notice may be obtained from the department offices. The university cannot continue two courses, one with and one without a newly-adopted prerequisite. The student must therefore meet the new prerequisite or obtain permission from the instructor to enroll in the course. In the event of any doubt as to the adequacy of preparation for a course, the student should consult with the instructor or an adviser in the department as far in advance as possible. Independent study, if approved, may be accepted in lieu of a specific course prerequisite.

Scholarship Standards

A UW cumulative grade point average of at least 2.000 is required for undergraduate degrees. The cumulative grade point average is defined as the sum of all grade points earned in residence, correspondence study, or outreach at the University of Wyoming, with the following exceptions:

1. The credit hours shall not be counted in courses in which marks of W, S, or U were assigned, or in which marks of I (for incomplete) are still in effect.
2. For repeated courses:
 - a. First repeat: only the second credit and grade is used to calculate the cumulative grade point average.
 - b. If repeated more than once, only the last grade is used to calculate the cumulative grade point average.
 - c. If a mark of W, S, or U is assigned in a repeated course, the previous grade assigned will stand except when an S or U is earned repeating a previous S or U.
 - d. Courses applied towards one completed degree may be repeated as part of a second degree; however, the grade and grade point average in the original degree will not be changed.
3. Transfer grades are not counted in the UW grade point average. If a course taken at UW is repeated for the first time at another institution, the credits and grade earned at UW will be deleted from the UW cumulative grade point average if credit for the repeated course is transferred to UW.
4. For graduate students, courses numbered below 4000 are not added into the semester and cumulative totals, nor computed into the grade point average.

University Studies Program

Students who entered the University of Wyoming, one of Wyoming's community colleges, or an out-of-state academic institution fall 2003 or later, are required to complete the University Studies Program 2003, a university-wide program in general education. The detailed requirements for the University Studies Program are provided in this bulletin on page 38.

Semester Hour Requirements

Completion of the total minimum credit hours for degrees from the various colleges is indicated below:

College of Agriculture	120 hours
College of Arts and Sciences:	
Regular	120 hours
Professional curricula	128 hours
College of Business	120 hours
College of Education	128-157 hours
College of Engineering	124-132 hours
College of Health Sciences	120-142 hours

University Requirements

1. A cumulative grade point average of 2.000 or better from the University of Wyoming.
2. Satisfactory completion of the prescribed curriculum in which the degree is sought, including fulfillment of the entrance requirements in the college concerned.
3. Students must complete a minimum of 48 upper division (junior/senior) or graduate-level semester credit hours, 30 of which must be earned from the University of Wyoming. Credit by examination does not count towards the required 30 hours of residency credit.
4. Not more than 24 semester hours of correspondence study courses may be used toward fulfilling requirements for a bachelor's degree.
5. Not more than 4 semester hours of credit in physical activity courses can count toward a bachelor's degree.
6. The last credit applicable to degree requirements must be earned from the University of Wyoming with the following exception: students of senior standing may complete degree requirements elsewhere by obtaining special permission of the department head, adviser, and college dean, and declaring an anticipated graduation date with the Office of the Registrar.
7. Native language credit: students are not allowed university credit for language courses below the 4000-level in their native language.

Assessment Requirement

Students may be required to complete assessment activities as determined by the university prior to the awarding of degrees.

Second Bachelor's Degree

Students seeking a second bachelor's degree must meet all of the university and college requirements as prescribed for a first bachelor's degree. Students whose first degree was received from an institution where English is not the predominant language must complete the University Studies Writing I (WA) and II (WB) requirements. The second bachelor's degree may have the same title as the first degree and may be in the same college as the first degree; but if in the same college it must be in a different major. Grades earned in all undergraduate course work (including courses applied towards a previous UW bachelor's degree) are included in the calculation of the cumulative GPA.

The minimum study requirement for a second bachelor's degree is 30 additional semester hours earned from the University of Wyoming, 12 of which must be in upper division (junior/senior-level) or graduate-level courses. However, a student must also fulfill all of the college and major requirements for the second degree. Credit by examination does not count toward UW residency. The 30 hours is in addition to the study requirement for the first degree for those students earning the first degree from the University of Wyoming. The 30 additional hours would be added to the degree requiring the least number of hours. Both degrees may be awarded at the same commencement.

Courses applied towards one completed degree may be repeated as part of a second degree; however, the grade and grade point average in the original degree will not be changed.

Students with a bachelors degree from an accredited U.S. institution will be considered to have met the UW University Studies (USP) program requirements, with the exception of the US and Wyoming Constitution requirement, unless previously completed.

Concurrent Majors

Students may pursue a concurrent major in one or more colleges. Only one degree (BA, BS, etc.) will be awarded from the college of the primary major. All university curricular requirements, including the University Studies Program requirements must be met only once. Requirements for secondary major(s) will be established by the academic departments and may include college requirements, in addition to all major requirements. An academic adviser in each major is required and each adviser must review requirements. The degree will be granted on one date only and only one diploma will be awarded. Both majors will be indicated on the academic transcript and diploma.

Dual Degrees

It is possible to pursue degrees in one or more colleges. The university requirements and University Studies Program requirements must be met only once. Students must meet the all college and major requirements of both majors. Students must complete an additional 30 semester hours from the University of Wyoming, 12 of which must be in upper-division (junior/senior-level) or graduate-level courses beyond the credit hour requirement for the degree with the minimum number of credit hours required. An academic adviser in each major is required and each adviser must review requirements. Multiple degrees and multiple diplomas will be awarded; however, the completion date must be the same. Both colleges, degrees, and majors will be indicated on the academic transcript.

CAPP/Graduation

The CAPP progress report shows requirements of the degree program and the progress that the student is making toward meeting those requirements. Any discrepancies should be reported to a degree analyst in the Office of the Registrar as soon as possible. **Students are responsible for notifying their degree analyst of their anticipated date of graduation.** All requirements indicated on the CAPP progress report must be met prior to a student being cleared for graduation. Students may review their CAPP progress report on WyoWeb.

Graduation Fee

Payment of the graduation fee of \$25.00 for each degree to be earned is due from all graduates at least three weeks before graduation. A late fee of \$5.00 is added if the graduation fee is paid less than three weeks before graduation.

Grades

Final grades covering completion of course work in correspondence study, outreach courses, transfer, special examinations, and incomplete work from previous attendance must be in the Office of the Registrar prior to when final grades are due for the term in which the degree is to be conferred.

Final Approval

Final recommendation of the faculty and approval of the University Trustees for conferral of degrees is required. The trustees may, for good cause, decline to confer a degree upon any candidate.

Participation in Commencement Exercises

The official graduation dates for the 2009-10 academic year are August 7, 2009, December 11, 2009, and May 8, 2010. To be eligible for a graduation date, all work must be completed prior to that date.

All academic colleges hold commencement exercises on the May graduation date. Several of the colleges also have commencement exercises in December. Check the appropriate college dean's office for specific information. Seniors are considered candidates for graduation. **Participation in the exercise does not automatically confer degrees. Confirmation of graduation will occur after a review of final course work.**

Commencement exercises are a historical academic custom involving participation by all segments of the university and attendance by members of the graduate's families and friends as well as the general public. Those students who participate in commencement exercises are expected to wear appropriate traditional academic regalia.

Graduation with Honors

Designations of summa cum laude, magna cum laude, and cum laude will be added to the baccalaureate academic transcripts and diplomas of graduating undergraduate students earning at least 48 credit hours from the University of Wyoming (of which 45 hours must be for A-F grades) based on the following percentages:

Top 1%	summa cum laude
Next 4%	magna cum laude
Next 5%	cum laude

as computed from the grade point averages of graduating undergraduate students in each college. Honors graduates will be identified by comparison to a 5-year rolling grade point distribution computed for each college, to be recomputed annually each spring semester.

These designations are effective with the fall 2000 semester and are not retroactive.

Honor graduation will be granted for students in the College of Law upon successful completion of 56 hours in the college with a cumulative grade point average of 3.4 or better based on University of Wyoming College of Law courses.

A Doctor of Pharmacy is awarded with honor by the university to a student who graduates with scholarship in pharmacy of unusual excellence as defined by the School of Pharmacy.

The University Studies Program 2003

Students first entering UW in the Fall 2003 semester or later must satisfy the USP 2003 requirements. USP codes are listed in course descriptions in brackets with the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

An education at the University of Wyoming is grounded in a broad understanding of human knowledge developed through a range of courses and co-curricular activities, the most important of which is the University Studies Program of general education, required of all UW students. The specialized knowledge of a major evolves from general education. These two components of an education are complementary, enhancing one another throughout a student's career.

The goal of the University Studies Program is to provide a general education that will help students develop for full participation in a technologically intricate world including:

1. The ability to express oneself in speech and writing;
2. The ability to locate, evaluate, and use information;
3. The ability to examine problems from quantitative, qualitative, and scientific perspectives;
4. Encouragement to become active citizens in a diverse society;
5. Gaining perspective to appreciate the viewpoints and deal with complex issues of others through multi- and inter-disciplinary inquiry;
6. Understanding the responsibility to participate in a democratic society;
7. Communicating clearly in a civic environment.

Requirements of the University Studies Program 2003 are:

Area	# of courses	Hours
Core Components:		
Core Components are mutually exclusive; meaning, two core components may not be fulfilled by the same course. Except for the QA, core courses may have topics from the embeddable components list included in their curriculum		
Intellectual Community	1	1-3
I - Offered in academic departments. May be taken for 1-3 credit hours		
Writing		
WA - Students must complete a WA course with a grade of C or better	1	3
Oral Communications		
O - One approved course emphasizing oral communication skills	1	3
Quantitative Reasoning		
QA - Quantitative Reasoning I	1	3
QB - Quantitative Reasoning II	1	3
Science	1-2	4-8
Complete two approved courses from any of the following categories. At least one of the courses must have a laboratory component.		
SB - Biological Sciences		
SP - Physical Sciences		
SE - Earth Sciences		
or		

Area	# of courses	Hours
Complete one approved Integrated Science (S) course, which must have a laboratory component.		
Cultural Context	3	9
Complete nine approved credit hours, three hours from each of the three categories.		
CH - Humanities		
CS - Social and Behavioral Sciences		
CA - Fine Arts		
Three hours of Integrated Cultural Context (C) may be substituted for one of the three categories.		
U.S. & Wyoming Constitution	1	1
V - Approved V courses fulfill both US and Wyoming Constitution requirements		
Physical Activity & Health	1	1
P - Complete an approved P course.		
Embeddable Components		
Embeddable Components are those that may be in a course dedicated solely to that topic, or embedded in courses dedicated to the core components of University Studies, or embedded in courses required for the major. Embeddable Components will ordinarily be fulfilled in the context of three-credit hour courses.		
Information Literacy	1	
L - One approved course		
Diversity in the U.S.	1	
D - One approved course		
Global Awareness	1	
G - One approved course		
Writing 2		
WB - One mid-level writing or writing-intensive course (2000-4999 level)	1	
Writing 3		
WC - One upper-division writing or writing-intensive course (3000-4999 level)	1	
Total:		30-36
Wyoming Community Colleges have defined a Common General Education Core Curriculum as a component of an associate's degree. Per the articulation agreement, an AA or AS degree from a Wyoming community college plus three additional credits of mathematics will satisfy the lower-division requirements of the University Studies Program. Students transferring to UW from any Wyoming community college without an associate's degree will have their transcript reviewed on a course by course basis. See page 22 for specific information regarding the Wyoming Community College Articulation Agreement.		
Students who enrolled at the University of Wyoming prior to the fall of 2003 and who maintained continuous enrollment have the option of satisfying USP 1991 or USP 2003 requirements. Wyoming community college students who transfer to UW will have the option of meeting either the USP 1991 requirements or the USP 2003 requirements.		

University Studies Designations

Beginning Fall Semester 2003, students entering UW are required to fulfill the **University Studies Program 2003**. Students who entered UW or a Wyoming community college prior to fall 2003 may complete the previous University Studies Program (USP 1991). Students must complete all of the requirements in the program under which they are enrolled, (either USP 1991 or USP 2003). Students who are currently under the USP 1991 requirement may choose to switch to USP 2003 with a University Studies Petition; however, they will be responsible for completing all of the USP 2003 requirements. Careful selection of courses is essential, as some courses may satisfy both 1991 and 2003 USP requirements, while others do not.

The following table displays the codes for both USP 1991 and USP 2003. The major difference between codes for the two systems is the use of alphanumeric designations for the old (1991) USP system, and solely letter designations for the new (2003) USP system. The sequence A, B, C, used for Writing and Quantitative Reasoning Categories would stand for Introductory, Lower Division, and Upper Division.

USP codes are listed in course descriptions in brackets with the 1991 USP code followed by the 2003 USP code, (e.g. **[M2↔QB]**).

Area	USP 1991 Codes	USP 2003 Codes
Integrated Cultural Context	-	C
Humanities	C1	CH
Social Sciences	C2	CS
Arts	C3	CA
Diversity in the United States	-	D
Global Awareness	G1	G
Intellectual Community	-	I
Freshman Seminar	F1	-
Information Literacy	-	L
Oral Communication	-	O
Physical Activity and Health	P1	P
Quantitative Reasoning I	M1	QA
Quantitative Reasoning II	M2	QB
Quantitative Reasoning III	M3	-
Integrated Science	-	S
Biological Science	S1	SB
Physical Science	S2	SP
Earth Science	S3	SE
US and Wyoming Constitutions	V1, V2, V3	V
Writing I	W1	WA
Writing II	W2	WB
Writing III	W3	WC

The following courses were approved for the University Studies Program 2003 at the time this bulletin went to press. The process of course approval is ongoing. For a complete and updated list of approved courses, see the USP web site at www.uwyo.edu/unst.

Cultural Context - Integrated (C)

AAST	4546	Agriculture: Rooted in Diversity
AGRI	4546	Agriculture: Rooted in Diversity
AIST	4546	Agriculture: Rooted in Diversity
AMST	3100	Food in American Culture
AMST	4546	Agriculture: Rooted in Diversity
CHST	4546	Agriculture: Rooted in Diversity
CLAS	2020	Classical Greek Civilization
ENGL	4546	Agriculture: Rooted in Diversity
FCSC	4546	Agriculture: Rooted in Diversity
HIST	4546	Agriculture: Rooted in Diversity
WMST	2000	Intro to GLBTQ/NS Studies

Cultural Context - Arts (CA)

AAST	2730	African Creativity and Ritual
ANTH	2730	African Creativity and Ritual
ART	1005	Drawing I
ART	1010	General Art: History
ART	2010	Art History Survey I
ART	2020	Art History II: Renaissance through Modern Art
ART	2730	African Creativity and Ritual
ART	4830	Victorian Women's Lives: Their Art, Literature and Culture
COJO	2400	Introduction to Photography
COJO	3200	Graphics of Communication
ENGL	4830	Victorian Women's Lives: Their Art, Literature and Culture
FCSC	1180	Applied Design
KIN	3025	Movement Core V: Folk, Square and Social Dance
MUSC	1000	Introduction to Music
MUSC	1380	Wind Ensemble
MUSC	1400	Collegiate Chorale
MUSC	1430	University Orchestra
MUSC	2050	Historical Survey I
MUSC	3480	String Ensemble: Chamber Music
MUSC	4315	America's Ethnic Music
THEA	1000	Intro to Theater
THEA	1100	Beginning Acting
THEA	1410	Ballet I/I
THEA	1420	Ballet I/II
THEA	1430	Modern Dance I/I
THEA	1440	Modern Dance I/II
THEA	2200	Backgrounds of Dance
THEA	3025	Teaching Creative Movement
THEA	4200	20th Century Dance
WMST	4830	Victorian Women's Lives: Their Art, Literature and Culture

Cultural Context - Humanities (CH)

AAST	2450	African Traditional Religions
AAST	4000	Quest for Civil Rights: Martin Luther King, Malcolm X and the Civil Rights Era
AAST	4160	African American Rhetoric
AIST	2290	History of North American Indians
AIST	2340	Native American Culture and Literature
AIST	2345	American Indians in Hollywood Film
AMST	2010	Introduction to American Studies
ARE	3030	History of Architecture
ART	3710	Gender and Humanities
ART	4610	Studies in Art
CHST	2360	Mexican American Literature
CHST	4470	Mexican American Literature
CLAS	2040	Classical Roman Civilization
COJO	2150	Argumentation
COJO	4160	African American Rhetoric
EDEL	2280	Literature for Children
ENGL	1080	Introduction to Women's Studies

ENGL	2020	Introduction to Literature
ENGL	2340	Native American Culture and Literature
ENGL	2345	American Indians in Hollywood Film
ENGL	2360	Mexican American Literature
ENGL	2410	Literary Genres
ENGL	2425	Literatures in English I
ENGL	2430	Literatures in English II
ENGL	2435	Literatures in English III, 1865- present
ENGL	3150	World Literature
ENGL	3710	Gender and Humanities
FREN	2140	Introduction to Reading
GERM	2140	Introduction to Literature
GERM	3006	20TH Century German Culture and Civilization
HIST	1110	Western Civilization I
HIST	2080	The Holocaust
HIST	2250	American Religious History I (to 1865)
HIST	2252	American Religious History II (to 1865)
HIST	2290	History of North American Indians
HIST	2320	History of Islam
HIST	3710	Gender and Humanities
HP	1151	Freshman Honors Colloquium I
HP	1161	Freshman Honors Colloquium II
PHIL	1000	Introduction to Philosophy
PHIL	2100	The Greek Mind
PHIL	2300	Ethics in Practice
PHIL	2310	Philosophy of Religion
PHIL	2330	Environmental Ethics
PHIL	2345	Natural Resource Ethics
PHIL	2420	Critical Thinking
PHYS	4690	Science Fact, Fiction and Future
RELI	1000	Introduction to Religion
RELI	2040	Religions of the Middle East
RELI	2080	The Holocaust
RELI	2110	Introduction to the Old Testament
RELI	2200	Contemporary American Religion
RELI	2250	American Religious History I (to 1865)
RELI	2252	American Religious History II (to 1865)
RELI	2320	History of Islam
RELI	2450	African Traditional Religions
RELI	3400	Religion in the American West
RNEW	2345	Natural Resource Ethics
RUSS	2140	Introduction to Reading
RUSS	3205	Russian Folklore and Folk Life
SPAN	2140	Introduction to Literature
WIND	2100	Introduction to Disability Studies
WMST	1080	Introduction to Women's Studies
WMST	3650	Contemporary U.S. Immigrant Women Writers
WMST	3710	Gender and Humanities

Cultural Context - Social Sciences (CS)

AAST	3670	African Diaspora
AGEC	1010	Principles of Macroeconomics
AGEC	1020	Principles of Microeconomics
AIR	3020	Air Force Leadership II
AIST	1001	Foundations in American Indian Studies
AIST	1350	American Indians in Contemporary Society
AIST	2210	North American Indians
AIST	4492	Indian Cultures of Latin America, 15th Century - Present
AMST	2110	Cultural Diversity in America
ANTH	1200	Introduction to Cultural Anthropology
ANTH	1300	Introduction to Archaeology
ANTH	1450	World Archaeology
ANTH	2200	Understanding Cultures
ANTH	2210	North American Indians
CHST	1100	Introduction to Chicano Studies
CHST	2370	Chicano History: Origins to 1900
CHST	3800	Chicanas/os in Contemporary Society
CNSL	2200	Introduction to Student Leadership
COJO	1000	Introduction to Mass Media
COJO	1040	Introduction to Human Communication

CNSL	2200	Introduction to Student Leadership	CHST	4546	Agriculture: Rooted in Diversity
ECON	1000	Global Economic Issues	COJO	3190	Cross-Cultural Communication
ECON	1010	Principles of Macroeconomics	EDSE	4254	Becoming a Reflective Practitioner: Specific Pedagogy in Music
ECON	1020	Principles of Microeconomics	EDST	2480	Diversity and the Politics of Schooling
EDST	2450	Human Lifespan Development	ENGL	1080	Introduction to Women's Studies
ENR	4000	Approaches to Environment and Natural Resource Problem-Solving	ENGL	2340	Native American Literature
ENR	4890	Topics in Environment and Natural Resources	ENGL	2345	American Indians in Hollywood Film
FCSC	2121	Child Development	ENGL	2350	Introduction to African American Literature
FCSC	3220	Multicultural Influences on the Young Child	ENGL	2360	Mexican American Literature
GEOG	1000	World Regional Geography	ENGL	4450	African American Novel
GEOG	1020	Introduction to Human Geography	ENGL	4460	American Indian Literature
GEOG	2370	Chicano History: Origins to 1900	ENGL	4546	Agriculture: Rooted in Diversity
GEOG	3030	Geography and Development	FCSC	3220	Multicultural Influences on the Young Child
GEOG	3550	Natural Hazards and Society	FCSC	4546	Agriculture: Rooted in Diversity
GEOG	4040	Conservation of Natural Resources	GEOG	2370	Chicano History: Origins to 1900
HIST	1320	World Civilization to 1450	HIST	2290	History of North American Indians
HIST	2040	Imperial China	HIST	2370	Chicano History: Origins to 1900
HIST	2370	Chicano History: Origins to 1900	HIST	3000	Plains Culture and History
HIST	4492	Indian Cultures of Latin America, 15th Century - Present	HIST	4000	Indians of Wyoming
INST	1000	Global Economic Issues	HIST	4405	American Encounters: Cross Cultural Relations to 1850
INST	1060	World Regional Geography	HIST	4406	American Encounters from 1850
INST	1200	Non-Western Political Cultures	HIST	4546	Agriculture: Rooted in Diversity
INST	4155	Women, War and Health	MUSC	4315	America's Ethnic Music
INST	4175	Gender, Women and Health	NURS	3020	Cultural Diversity in Family Health Care
INST	4680	Shanghai: Past & Present	PHIL	2345	Natural Resource Ethics
NURS	4155	Women, War and Health	RELI	2200	Contemporary American Religion
NURS	4175	Gender, Women and Health	RELI	3400	Religion in the American West
NURS	4960	Women's Bodies/Women's Minds	RELI	4100	African American Religious Culture
POLS	1200	Non-Western Political Cultures	REWM	4051	Environmental Politics
POLS	2000	Current Issues in American Politics	RNEW	2345	Natural Resource Ethics
POLS	2430	Parties, Interest Groups & Elections	SOC	1350	American Indians in Contemporary Society
PSYC	1000	General Psychology	SOC	2350	Race and Ethnic Relations
SOC	1000	Sociological Principles	SOC	3800	Chicanas/os in Contemporary Society
SOC	1100	Social Problems	SPPA	4070	Deaf Studies
SOC	1350	American Indians in Contemporary Society	WIND	2100	Introduction to Disability Services
SOC	3670	African Diaspora	WIND	2700	Women with Disabilities
SOC	3800	Chicanas/os in Contemporary Society	WMST	1030	Social Justice in the 21st Century
SOC	4680	Shanghai: Past & Present	WMST	1080	Introduction to Women's Studies
SPPA	4070	Deaf Culture and the History of Deaf America	WMST	2000	Intro to GLBTQ/NS Studies
WIND	4020	Disability: Supports and Services	WMST	2700	Women with Disabilities
WMST	3650	Contemporary U.S. Immigrant Women Writers	WMST	3650	Contemporary US Immigrant Women Writers
WMST	3800	Chicanas/os in Contemporary Society	WMST	3800	Chicanas/os in Contemporary Society
WMST	4155	Women, War and Health			Global Awareness (G)
WMST	4175	Gender, Women and Health	AAST	2450	African Traditional Religions
WMST	4960	Women's Bodies/Women's Minds	AAST	2730	African Creativity and Ritual
		Diversity in the US (D)	AAST	3670	African Diaspora
AAST	1000	Introduction to African American Studies	AECL	1000	Agroecology
AAST	1030	Social Justice in the 21st Century	AGEC	3860	Economics of World Food & Agriculture
AAST	2350	Introduction to African American Literature	AGEC	4880	International Agricultural Trade, Marketing and Policy
AAST	4100	African American Religious Culture	AIR	4010	National Security Affairs I
AAST	4546	Agriculture: Rooted in Diversity	AIST	4492	Indian Cultures of Latin America, 15th Century - Present
AGRI	4546	Agriculture: Rooted in Diversity	ANTH	1200	Introduction to Cultural Anthropology
AIST	1001	Foundations in American Indian Studies	ANTH	1300	Introduction to Archaeology
AIST	1030	Social Justice in the 21st Century	ANTH	1450	World Archaeology
AIST	1350	American Indians in Contemporary Society	ANTH	2200	Understanding Cultures
AIST	2210	North American Indians	ANTH	2730	African Creativity and Ritual
AIST	2290	History of North American Indians	ANTH	3015	Introduction to the Music of the World's Peoples
AIST	4460	American Indian Literature	ARE	3030	History of Architecture
AIST	4546	Agriculture: Rooted in Diversity	ART	2730	African Creativity and Ritual
AMST	1030	Social Justice in the 21st Century	LIFE	2002	Global Ecology
AMST	2110	Cultural Diversity in America	BUSN	2000	Introduction to International Business
AMST	4546	Agriculture: Rooted in Diversity	CHIN	3055	Business Chinese
ANTH	2210	North American Indians	CRMJ	4280	Comparative Criminal Justice
CHST	1030	Social Justice in the 21st Century	ECON	1000	Global Economic Issues
CHST	1100	Introduction to Chicano Studies	ENGL	3150	World Literature
CHST	2360	Mexican American Literature	ENR	2000	Environment and Society
CHST	2370	Chicano History: Origins to 1900	ESS	3480	Environmental Change
CHST	3800	Chicanas/os in Contemporary Society			
CHST	4470	Chicano/a Folklore			

FCSC	4181	Global Textile Marketplace
FREN	2140	Introduction to Reading
GEOG	1000	World Regional Geography
GEOG	1020	Introduction to Human Geography
GEOG	3030	Geography and Development
GEOG	3480	Environmental Change
GEOL	1600	Global Sustainability
GEOL	3600	Earth & Mineral Resources
GEOL	3650	Energy: A Geological Perspective
GERM	2140	Introduction to Literature
HIST	1330	World Civilizations from 1450
HIST	2040	Imperial China
HIST	2320	History of Islam
HIST	4492	Indian Cultures of Latin America, 15th Century - Present
HLSC	4100	Global Public Health
INST	1000	Global Economic Issues
INST	1060	World Regional Geography
INST	1200	Non-Western Political Cultures
INST	2000	Introduction to International Business
INST	2100	Social Change
INST	2310	Introduction to International Relations
INST	3100	Chinese Society
INST	3400	Politics and Society of Turkey
INST	3860	Economics of World Food & Agriculture
INST	4100	Global Public Health
INST	4110	Sociology of International Development
INST	4155	Women, War, and Health
INST	4175	Gender, Women, and Health
INST	4250	Economic Development in Asia
INST	4370	Global Political Economy
INST	4680	Shanghai: Past & Present
MUSC	3015	Introduction of the Musics of the World's Peoples
PHIL	3250	Global Justice
POLS	1200	Non-Western Political Cultures
POLS	2300	World Politics in the Post-Cold War Era
POLS	2310	Introduction to International Relations
POLS	4890	Seminar in Comparative Politics
RELI	1000	Introduction to Religion
RELI	2040	Religions of the Middle East
RELI	2320	History of Islam
RELI	2450	African Traditional Religions
RUSS	2140	Introduction to Reading
RUSS	3205	Russian Folklore and Folk Life
SOC	2100	Social Change
SOC	2140	African Societies
SOC	3050	Japanese Society
SOC	3100	Chinese Society
SOC	3670	African Diaspora
SOC	4110	Sociology of International Development
SOC	4370	Global Political Economy
SOC	4680	Shanghai: Past & Present
SPAN	2140	Introduction to Literature
SPAN	3120	Survey of Spanish American Literature
THEA	2200	Backgrounds of Dance
WMST	4155	Women, War and Health
WMST	4175	Gender, Women and Health
WMST	4590	Women of India
Information Literacy (L)		
AS	1000	Intellectual Community of Undeclared Students
AS	1205	First Year Experience Seminar
ACCT	1020	Principles of Accounting II
AGEC	1000	Agriculture and Applied Economics Orientation
AGRI	1001	Intellectual Community and Information Literacy in Agriculture
AGRI	3000	Discovering and Utilizing Ideas and Information
ANSC	1000	Intellectual Community in Animal and Veterinary Sciences
ANTH	2000	Introduction to Linguistic Anthropology
BOT	3100	Plants and Civilization
BOT	4100	Writing in Biological Sciences
CHEM	1001	The Chemical Community
CNSL	1000	Relationship Skills: Counseling in Action
CNSL	2200	Introduction to Student Leadership
COJO	1001	Issues in the Mass Media
COJO	1041	Issues in Human Communication
CRMJ	1005	Issues in Criminal Justice
CRMJ	3680	Research Methods
EDSE	1000	Exploring Hot Topics in Secondary Education
EDST	1500	Education for Social Justice
ENGL	3050	Designing in Digital Spaces
ENR	1100	Environment & Natural Resources Problems & Policies
ES	1000	Orientation to Engineering
ES	1002	Introduction to Engineering Information Literacy
ESS	1000	Wyoming in the Earth System
FCSC	1010	Perspectives in Family and Consumer Sciences
GEOL	1001	Intellectual Community/Earth Sciences
HIST	3020	Historical Methods/Introduction to Historical Methodology
HLSC	1010	Exploring the Health Sciences
HLSC	1020	Intellectual Community: Women in Sports
HP	1020	Freshman Honors Colloquium I
HP	1151	Freshman Honors Colloquium I
INST	1010	International Studies Proseminar
ITEC	1000	Visual Literacy for Life and Learning
ITEC	2360	Teaching with Microcomputers
KIN	1004	Foundations of Physical Education
KIN	1005	Introduction to Kinesiology and Health Promotion
LBRY	3010	Research from a Distance
LBRY	3020	Managing and Navigating the World of Information
LIFE	1001	Biology as Culture
MOLB	1010	Science and Society
MUSC	1003	Introduction to University Life as a Music Major
NURS	1000	Introduction to the Intellectual Community in Nursing
NURS	4150	Professional Roles: Researcher
PHCY	6250	Drug Literature Evaluation
POLS	1111	Issues in Political Science
PSYC	1001	Issues in Psychology
SOWK	1001	Intellectual Community in Social Work
SOWK	1002	Intellectual Community: The Social Work Profession
SOWK	1900	Women and Leadership
SPPA	1010	Introduction to Communication Disorders
THEA	1020	Theatre and Dance Intellectual Community
THEA	1021	Freshman Seminar: Academic and Professional Issues in Dance
UWYO	1000	Intellectual Community of Undeclared Students
UWYO	1450	Building Community, Affirming Diversity: Strategies for Success in College and Life
WMST	1020	Intellectual Community: Women in Sports
WMST	1900	Women and Leadership
ZOO	4100	Writing in Biological Sciences
Intellectual Community (I)		
AS	1000	Intellectual Community of Undeclared Students
AS	3105	From Gilgamesh to the Bomb
AAST	1030	Social Justice in the 21st Century
ACCT	1010	Principles of Accounting I
ADED	1000	Adult Education Inquiry
ADED	1008	Eastern Thought Western Practice
AGEC	1000	Agriculture and Applied Economics Orientation
AGRI	1001	Intellectual Community and Information Literacy in Agriculture
AGRI	3000	Discovering and Utilizing Ideas and Information
AIST	1030	Social Justice in the 21st Century
AMST	1030	Social Justice in the 21st Century
ANSC	1000	Intellectual Community in Animal and Veterinary Sciences
ANTH	1000	Intellectual Community in Anthropology
CHEM	1001	The Chemical Community

CHST	1030	Social Justice in the 21st Century
CNSL	1000	Relationship Skills: Counseling in Action
COJO	1001	Issues in the Mass Media
COJO	1041	Issues in Human Communication
CRMJ	1005	Issues in Criminal Justice
EDAD	1000	Schools and Democracy
EDEL	1000	Exploring Hot Topics in Education
EDSE	1000	Exploring Hot Topics in Secondary Education
EDST	1500	Education for Social Justice
ENGL	1030	Intellectual Community in Cinema, etc.
ENR	1100	Environment and Natural Resource Problems and Policies
ES	1000	Orientation to Engineering
ESS	1000	Wyoming in the Earth System
FCSC	1010	Perspectives in Family and Consumer Sciences
GEOL	1001	Intellectual Community/Earth Sciences
HIST	1010	Introduction to History: Encounters with Difference
HLSC	1010	Exploring the Health Sciences
HLSC	1020	Intellectual Community: Women in Sports
HP	1000	Intellectual Communities
INST	1010	International Studies Proseminar
IITEC	1000	Visual Literacy for Life and Learning
KIN	1004	Foundations of Physical Education
KIN	1005	Introduction to Kinesiology and Health Promotion
LANG	1030	Intellectual Community in Cinema, etc.
LIFE	1001	Biology as Culture
MATH	1305	Bit Streams and Digital Dreams
MOLB	1010	Science and Society
MUSC	1003	Introduction to University Life as a Music Major
NASC	1001	Quantitative Reasoning
NURS	1000	Introduction to the Intellectual Community in Nursing
PHIL	1200	Intellectual Community in Philosophy
POLS	1111	Issues in Political Science
PSYC	1001	Issues in Psychology
PSYC	1111	Psychology and Social Justice
SOWK	1001	Intellectual Community in Social Work
SOWK	1002	Intellectual Community: The Social Work Profession
SPPA	1010	Introduction to Communication Disorders
THEA	1020	Theatre and Dance Intellectual Community
THEA	1021	Freshman Seminar: Academic and Professional Issues in Dance
UWYO	1000	Intellectual Community of Undeclared Students
UWYO	1450	Building Community, Affirming Diversity: Strategies for Success in College and Life
WMST	1020	Intellectual Community: Women in Sports
WMST	1030	Social Justice in the 21st Century
WMST	1090	Women in Contemporary Society

Natural Science - Biological (SB)

AECL	1000	Agroecology
AECL	2025	Horticultural Science
AECL	2026	Horticultural Sciences Laboratory
ANTH	1100	Introduction to Biological Anthropology
ENTO	1000	Insect Biology (no lab)
ENTO	1001	Insect Biology (with lab)
KIN	2040	Human Anatomy
KIN	2041	Human Anatomy Laboratory
LIFE	1003	Current Issues in Biology
LIFE	1010	General Biology
LIFE	1020	Life Science
LIFE	2002	Global Ecology
PLNT	2025	Horticultural Science
PLNT	2026	Horticultural Science Laboratory
PSYC	4080	Physiological Psychology
ZOO	2040	Human Anatomy
ZOO	2041	Human Anatomy Laboratory

AECL	2010	Introduction to Soil Science
ASTR	1050	Survey of Astronomy
ASTR	1070	The Earth: Its Physical Environment
ATSC	2000	Introduction to Meteorology
ESS	2000	Geochemical Cycles and the Earth System
GEOG	1010	Introduction to Physical Geography
GEOL	1070	The Earth: Its Physical Environment
GEOL	1100	Introduction to Physical Geology
GEOL	1200	Historical Geology
GEOL	2000	Foundations of Geology I
GEOL	2080	General Field Geology
GEOL	3080	General Field Geology
GEOL	3400	Geological Hazards
GEOL	3600	Earth & Mineral Resources
GEOL	3650	Energy: A Geological Perspective
SOIL	2010	Introduction to Soil Science

Natural Science - Integrated Science (S)

GEOL	1005	Earth History
GEOL	1600	Global Sustainability
LIFE	1002	Discovering Science

Natural Science - Physical (SP)

CHEM	1000	Introductory Chemistry
CHEM	1020	General Chemistry I
CHEM	1030	General Chemistry II
CHEM	1050	General Chemistry and Qualitative Analysis I
CHEM	1060	General Chemistry and Qualitative Analysis II
PHYS	1050	Concepts of Physics
PHYS	1090	Fundamentals of the Physical Universe
PHYS	1110	General Physics I
PHYS	1120	General Physics II
PHYS	1210	Engineering Physics I
PHYS	1220	Engineering Physics II
PHYS	1310	College Physics I
PHYS	1320	College Physics II

Oral Communication (O)

COJO	1010	Public Speaking
COJO	1020	Communication and Civic Engagement
EDST	3000	Teacher as Practitioner
PETE	4720	Petroleum Engineering Design I
PETE	4735	Petroleum Engineering Design II
SOWK	1900	Women and Leadership
WMST	1900	Women and Leadership

Physical Activity and Health (P)

NURS	3630	Nursing Therapeutics: Health Promotion
PEAC	1001	Physical Activity and Your Health

Quantitative Reasoning (QA)

MATH	1000	Problem Solving
MATH	1400	College Algebra
MATH	1405	Trigonometry
MATH	1450	Algebra and Trigonometry

Quantitative Reasoning (QB)

ENR	4500	Risk Analysis
MATH	1050	Finite Math
MATH	1105	Math for Elementary School Teachers II
MATH	2200	Calculus I
MATH	2350	Business Calculus
SOC	2070	Introductory Statistics for the Social Sciences
STAT	2000	Statistics and the World
STAT	2010	Statistical Concepts for Business and Management Science
STAT	2050	Fundamentals of Statistics
STAT	2070	Introductory Statistics for the Social Sciences

U.S. and Wyoming Constitutions (V)			EDEL 4309	Elementary Literacy Methods
ECON 1200	Economics, Law and Government		EDSE 3278	Subject Matter Specific Methods I: Secondary Agriculture Education
HIST 1211	United States History to 1865		EDSE 4254	Becoming a Reflective Practitioner: Specific Pedagogy in Music
HIST 1221	US from 1865		EDSE 4270	Subject Matter Specific Methods II: Secondary English Education
HIST 1251	Wyoming History		EDSE 4271	Subject Matter Specific Methods II: Secondary Mathematics Education
POLS 1000	American and Wyoming Government		EDSE 4272	Subject Matter Specific Methods II: Art Education K-12
Writing 1 (WA)			EDSE 4273	Subject Matter Specific Methods II: Secondary Social Studies Education
ENGL 1010	College Composition and Rhetoric		EDSE 4275	Subject Matter Specific Methods II: Secondary Science
ENGL 1210	College Composition and Rhetoric for International Students		EDSE 4276	Subject Matter Specific Methods II: Secondary Modern Language Education
HP 1020	Freshman Honors Colloquium I		EDSE 4277	Subject Matter Specific Methods II: Secondary Industrial Technology Education
Writing 2 (WB)			ENGL 4000	21st Century Issues in Professional Writing
AAST 2350	Introduction to African American Literature		ENGL 4010	Technical Writing in the Professions
AGEC 3400	Agricultural Law		ENGL 4070	Writing for Non-Profits
AMST 2010	Introduction to American Studies		ENGL 4990	Senior Seminar
ANTH 3015	Introduction to the Music of the World's Peoples		ENR 4051	Environmental Politics and Administration
ANTH 3300	Ethnographic Methods in Anthropology		ENR 4900	Environment and Natural Resources Assessment Practice
ANTH 3500	Gender and Society		ESE 4070	Energy Systems Design II
ART 4730	19th Century European Art		ESS 4950	Exploring the Earth System
ART 4740	20th Century European Art		FCSC 4127	Directing Preschool and Day Care Programs
ART 4850	Art Institutions and Change		FCSC 4139	Prevention Programs in Family Services
CE 3210	Civil Engineering Materials		FCSC 4182	Textile Industry and the Environment
CHE 3040	Unit Operations Laboratory I		FREN 4140	17th Century French Literature
CLAS 2020	Classical Greek Civilization		GEOG 4051	Environmental Politics and Administration
CLAS 2040	Classical Roman Civilization		GEOG 4540	Topics in Cultural Ecology
COJO 2100	News Writing and Reporting		GEOL 3080	General Field Geology
EDST 3000	Teacher as Practitioner		GEOL 4820	Capstone
ENGL 2005	Writing in Technology and the Sciences		GERM 3006	20TH Century German Culture and Civilization
ENGL 2020	Introduction to Literature		HIST 4030	Departmental Proseminar
ENGL 2030	Critical Reading and Writing		INST 4110	Sociology of International Development
ENGL 2035	Writing for Public Forums		INST 4950	Capstone
ENGL 2350	Introduction to African American Literature		KIN 3015	Teaching Lab II and Assessment in Physical Education
ENGL 2410	Literary Genres		ME 4070	System Design II
ENR 4000	Approaches to Environment and Natural Resource Problem-Solving		MOLB 4300	Writing in Molecular Biology
ESS 3480	Environmental Change		NURS 4250	Professional Roles: Leader
FCSC 2170	Clothing in Modern Society		PETE 4735	Petroleum Engineering Design II
FREN 3050	Third Year French I		PHCY 6250	Drug Literature Evaluation
GEOG 3480	Environmental Change		PHYS 4690	Science Fact, Fiction and Future
GERM 3050	Third Year German I		POLS 4051	Environmental Politics and Administration
GERM 4080	German-English and English-German Translation		POLS 4850	Seminar in American Politics and Institutions
HIST 3020	Historical Methods/Introduction to Historical Methodology		POLS 4890	Seminar in Comparative Politics
INST 2100	Social Change		PSYC 4050	Experimental Psychology
MUSC 3015	Introduction of the Musics of the World's Peoples		PSYC 4220	Psychopharmacology
PETE 4720	Petroleum Engineering Design II		PSYC 4740	Advanced Social Psychology
POLS 3500	Gender and Society		PSYC 4830	Senior Thesis in Psychology
PSYC 2000	Research Methods in Psychology		RELI 4100	African American Religious Culture
SOC 3500	Gender and Society		REWM 4051	Environmental Politics and Administration
SPAN 3050	Intermediate Spanish Composition and Conversation		REWM 4900	Rangeland Management Planning
WMST 3500	Gender and Society		RNEW 4510	Research Planning
Writing 3 (WC)			SOC 4110	Sociology of International Development
AAST 4100	African American Religious Culture		SOC 4650	Urban Sociology
ACCT 4600	Ethics and Professionalism		SOWK 4570	Social Work Research Project
AECL 4990	Agroecology Seminar		SPAN 4200	Introduction to Research
AGEC 4950	Senior Thesis I		SPPA 4750	Research Methods in Communication Disorders
AGEC 4960	Senior Thesis II		THEA 4200	20th Century Dance
AGEC 4965	Agribusiness Strategy and Ethics Capstone		THEA 4930	Theatre History I
AMST 4051	Environmental Politics and Administration		WMST 4700	Feminist Theories and Methodologies
ANSC 4630	Topics and Issues in Animal Science		ZOO 4100	Writing in Biological Sciences
ANTH 4010	History of Anthropological Thought			
BOT 4100	Writing in Biological Sciences			
CHE 4080	Process Design II			
COJO 3160	Theory of Language and Society			
COJO 4100	Investigative Reporting			
COJO 4110	Feature Writing Seminar			
CRMJ 3680	Research Methods			
CRMJ 4280	Comparative Criminal Justice			

Division of Student Affairs

408 Old Main, (307) 766-5123, Fax: (307) 766-2696 Sara Axelson, Vice President, Student Affairs

The Division of Student Affairs is the administrative unit of the university that is responsible for providing leadership and coordination of programs and services designed to support the learning and development of UW students so that they may be informed and engaged citizens and leaders in the communities of Wyoming, the nation, and the world.

In partnership with UW faculty, staff, and students, the Division of Student Affairs orchestrates the enrollment management programs of the University to recruit and retain a student body of the size and diversity appropriate to the needs of the state, the demands of the world of work, and the resources of the institution. The division also develops and delivers services, programs, and facilities that promote the intellectual, personal, cultural, and civic development of students; coordinates efforts to create a caring community in which individuals are respected, encouraged to pursue excellence, and achieve their potential; and fosters the celebration of diversity of individuals and cultures.

There are three clusters within the Division of Student Affairs which include Enrollment Management; Health and Wellness; and Residence Life, Dining Services, and the Wyoming Union. The Enrollment Management cluster consists of the Admissions Office; Center for Advising and Career Services; Office of the Registrar; Student Educational Opportunity which includes University Disability Support Services; and Office of Student Financial Aid. The Health and Wellness cluster includes Campus Recreation; the Dean of Students Office which includes Multicultural Affairs; Student Health Service; and the University Counseling Center which includes the university's drug and alcohol education program. The third cluster consists of Residence Life, Dining Services, and the Wyoming Union. The Office of Alumni Affairs, the Associated Students of the University of Wyoming (ASUW), and the Associated Parents of the University of Wyoming (APUW) are also a part of the Division of Student Affairs and are essential components of the support services structure designed to help students succeed.

Enrollment Management Admissions Office

Noah Buckley, Director of Admissions
146 Knight Hall, (307) 766-5160
Web site: www.uwyo.edu/admissions

A new undergraduate student's first official contact with the University of Wyoming is often through the Admissions Office. This unit is responsible for recruiting/admitting undergraduate students to the university. Responsibilities include the development of effective school relations, programs with high schools and community colleges, recruitment of prospective freshmen and undergraduate transfer students, the orientation of new undergraduates, and the administration of resident/nonresident regulations for tuition classification. The Admissions Office determines initial scholarship eligibility for all new undergraduate students. The Admissions Office also manages the International Students and Scholars office. A detailed description of admission to the university and procedures can be found in the admission policies section of this publication.

International Students and Scholars

Jill Johnson, Associate Director of Admissions

Cheney International Center, Suite 5, (307) 766-5193
Web site: www.uwyo.edu/ISS

International students, numbering approximately 530 from nearly 80 countries, are a vital part of international education at the University of Wyoming. As such, International Students and Scholars (ISS) works to promote an interchange of ideas and understanding from among all of the countries represented on campus. ISS is responsible for recruitment of undergraduate international students and provides advising and counseling to all international students/scholars for their academic, social, personal, and immigration concerns. The office also promotes and implements social and cultural activities for international awareness and educational exchange through International Education Week, Friendship Families, American Conversation Club, international coffee hours, and other special programs. Many of these activities are coordinated through the ISS-sponsored International Resource Center in the Cheney International Center, Suite 5.

International students and visitors are required to contact International Students and Scholars to confirm their arrival at the University of Wyoming and to consider the office their primary contact for further information and assistance. Students must be enrolled as full-time students each semester as required by the U.S. Citizenship and Immigration Services. The ISS e-mail address is uwglobal@uwyo.edu.

National Student Exchange: The University of Wyoming is a member of the National Student Exchange (NSE) consortia. Through NSE, students are provided an opportunity to attend one of more than 175 U.S. institutions in the NSE consortium. NSE offers a student the chance to live in another part of the United States and to travel and experience college life in different settings for an academic semester or a year under his or her normal UW tuition and fees. Financial aid is often available and academic credit is guaranteed to transfer back to UW.

For more information about the National Student Exchange, please contact International Students and Scholars, Dept. 3228, 1000 E. University Ave., Laramie, WY 82071 or call (307) 766-5193. The e-mail address is uwglobal@uwyo.edu.

Center for Advising and Career Services

Jo Chytka, Director
222 Knight Hall, (307) 766-2398
Web site: www.uwyo.edu/CACS

The Center for Advising and Career Services (CACS) provides a variety of services to UW students, including advising undecided students, and A&S undeclared students; providing academic support to various populations of probationary, conditionally admitted, and reinstated students; assisting students campus-wide with their career exploration, planning, and job search needs; assisting in coordinating discussions, information dissemination, and event planning between the various professional advisors and advising offices on campus; and coordinating national tests and exams through the University Testing Center.

The center is committed to providing a comprehensive and integrated service that moves a student along a continuum of receiving academic advising, exploring academic and career options, selecting a college major, and finally, implementing his/her degree in the world of work.

Undeclared students and A&S students admitted with conditions, placed on probation, or reinstated to the university are highly encouraged to meet with a CACS career counselor. The purpose of this meeting is to analyze the student's past academic progress and future career goals to develop a strategic plan to maximize his/her academic success and future employment opportunities. CACS also works closely with other campus offices and departments to engage students in available study skill and tutorial resources.

Students interested in engaging in career exploration activities may make an appointment to meet with a career counselor to discuss their career goals and/or confirm their choice of major. Various assessment tools that provide feedback on the match between a student's interests or personality type and the world of work are available. CACS houses a career resource library, which contains information pertaining to a broad range of career fields, internship opportunities, specific employer information, and general job search strategies. These materials are available for check out.

Students are advised to use the eRecruiting link on the CACS homepage to find out about and apply for summer, internship, and permanent job opportunities. Each year numerous employer representatives from business, industry, health care, education, and government visit CACS to interview students for these types of opportunities. All information pertaining to these visits is contained in the eRecruiting link on the CACS homepage. Students need to register with CACS to obtain their username and password.

CACS hosts numerous general and specialized job fairs each year for students and alumni. Upcoming job fair dates can be found on the CACS homepage.

The University Testing Center: The University Testing Center coordinates national tests and exams and is housed in the Knight Hall basement, room 4. Students may register to take national tests and professional school entrance exams. Information is available on the University Testing Center web site www.uwyo.edu/UTC or by calling (307)766-2188.

Office of the Registrar

Tammy Aagard, Registrar
167 Knight Hall, (307) 766-5272
Web site: www.uwyo.edu/registrar

The Office of the Registrar is responsible for overseeing course registration, transcripts, verification of enrollment, adding/dropping/withdrawing from courses, and for maintaining student academic records. This involves responsibility for web registration, as well as preparation and publication of the fall and spring *Class Schedules*, *Summer Bulletin*, and *General Bulletin*. The office is also responsible for CAPP, the electronic degree audit program, and for determining whether or not students have successfully met all degree requirements. Additionally, this office evaluates all transfer credit for undergraduate students to determine transferability as well as UW equivalents.

Student Educational Opportunity (SEO)

Pilar Flores, Director
330 Knight Hall, (307) 766-6189 (TTY: 766-3073)
Web site: www.uwyo.edu/SEO

Student Educational Opportunity is composed of both on-campus and outreach projects with offices throughout Wyoming. These projects serve students who are first generation, income-eligible, students with cognitive, psychological or physical disabilities; ethnic minority students; non-traditional students. SEO assists eligible students to plan and prepare for entry into higher education, succeed in the higher education environment, and graduate from college by providing academic success services, disability-related accommodations when appropriate, and instruction in basic skills, career, and personal development. All projects within SEO seek to increase the public awareness of the needs of ethnic minority, first generation, income-eligible students, and students with disabilities in an educational environment.

On-Campus Projects

Academic Services: Academic Services coordinates and provides free group and individual tutoring to students who participate in SEO projects. Other activities include the development of workshops on academic success, the management of a College Reading and Learning Association (CRLA) certified tutor training program, and assisting UW students in identifying and accessing academic services.

McNair Scholars Program: The McNair Scholars Program prepares students to pursue doctoral level study. Services include intensive academic support including tutoring and academic counseling; activities related to successful application to graduate school and pursuit of financial aid opportunities; preparation for the GRE; and faculty mentoring. The capstone of the program is a paid summer research internship program which prepares students for admission to graduate level education. Students who are juniors and seniors, income-eligible, and first generation college students or who are from ethnic minority groups under-represented in graduate education qualify for program services. The McNair Scholars Project is a federally funded TRIO project. Note: this is a graduate school preparation program; it is not a scholarship.

Student Success Services: The Student Success Services (SSS) project offers academic support to students who are first generation college students, income-eligible, and/or individuals with disabilities. Student Success Services provides assistance with academics, personal/social choices, financial issues and pursuit of financial aid opportunities, and choice of college major and related career opportunities. The SSS project also provides its students with individual and group tutoring. All services are free to eligible participants and services are intended to help students be successful in college and to stay in college through graduation. SSS is a federally funded TRIO project.

University Disability Support Services: University Disability Support Services (UDSS) provides a variety of services for students with physical, sensory, cognitive, or psychological disabilities, including printed materials in alternative format, note-taking assistance; classroom relocation, testing accommodations, access to adapted computers, parking assistance, advocacy, sign language interpreters, mobility orientation for the blind, as well as other academic support services. UDSS assists UW to meet its legal and ethical obligations under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Services are coordinated with the efforts of the Division of Vocational Rehabilitation and Wyoming Services for the Visually Impaired, when appropriate. Students with disabilities who anticipate needing accommodations to fully participate in classes and programs at the University of Wyoming are strongly encouraged to register with UDSS and provide documentation of their disability.

Outreach Projects

Educational Opportunity Center: The Educational Opportunity Center (EOC) assists first generation and income-eligible adults throughout Wyoming to continue their education. Services include assistance with college and financial aid applications, career and college exploration, and GED preparation. Outreach offices are located in Casper, Cheyenne, Ethete, Evanston, Gillette, Powell, Riverton, Rock Springs, Sheridan, Torrington, and Worland. EOC is a federally funded TRIO project.

GEAR-UP: The Wyoming Statewide GEAR-UP project provides services to 2000 low-income pre-college students throughout the state each year. Student services include career exploration, advising and supporting students in taking a college preparation curriculum, college preparation, ACT preparation, college exploration, application, and planning, and assistance with financial aid processes and procedures. Student services are provided through GEAR-UP coordinators located at each of Wyoming's seven community colleges. The GEAR-UP grant also works with the Wyoming Department of Education in providing teacher training and school improvement initiatives. All GEAR-UP services are aimed at increasing student academic preparation and performance levels suited for post-secondary education, rates of high school graduation, rates of post-secondary education participation and graduation, and GEAR-UP student and family knowledge of post-secondary education options, high school preparation needs, and means of financing.

Math/Science Initiative Project: The Math/Science Initiative Project (MSIP) provides services to income-eligible and first generation 9th through 12th grade high school students throughout Wyoming. MSIP is designed to generate the skills and motivation necessary to be successful in high school and to complete a college degree program in a math or science area. Assistance with high school coursework and tasks related to college enrollment are provided throughout the academic year. The MSIP program includes a six-week summer academic session with an intensified math and science curriculum that includes performing active research under the guidance of university staff and graduate students. MSIP is a federally funded TRIO project.

Upward Bound: The Upward Bound program works with income-eligible, first generation high school students (grades 9-12) and their families to help them gain the skills and motivation necessary to successfully complete high school and to pursue a college degree. The program includes a six-week summer academic component designed to help students develop academically and socially in a university setting. Tutorial and enrichment services are provided throughout the academic year and participants and their families receive individualized assistance in completing tasks related to successful college enrollment. Outreach offices are located in Albany, Fremont, Laramie, and Natrona counties. Upward Bound is a federally funded TRIO project.

Office of Student Financial Aid

David Gruen, Director
174 Knight Hall, (307) 766-2118
Web site: www.uwyo.edu/SFA

The Office of Student Financial Aid assists students in obtaining funds to attend the University of Wyoming by coordinating and administering all forms of financial assistance to students. Four broad categories of aid are available: scholarships, grants, loans, and work-study employment. Over 1,000 different scholarship programs, funded through federal, state, institutional, and private sources, are coordinated. Federal Pell, ACG-Smart, and Federal Supplemental Educational Opportunity Grants are available to undergraduate students with significant financial need, who are pursuing a first bachelor's degree. Hathaway Scholarships, Federal Perkins, Federal Stafford and Federal PLUS Loans are available to qualified students. Federal Work-Study employment is available to students with a qualifying level of financial need. For additional information, please refer to the Student Financial Aid section in this bulletin.

Health and Wellness

Campus Recreation

Pat Moran, Director
Half Acre Gym, (307) 766-5586
Web site: www.uwyo.edu/Rec

Our mission is to provide recreational opportunities to a diverse campus community that enhance the learning and workplace environment and promote mental and physical health via quality facilities, equipment, and programs. Our programs, which include open recreation, intramural sports, club sports, and the outdoor program, offer a broad range of coordinated activities for individuals and groups that promote health awareness, a sense of community and a lifelong appreciation for wellness and recreational activities. Supporting the value of student development, our programs strive to offer opportunities to students that develop leadership skills and promote responsibility while maintaining a balance between personal, professional, and academic pursuits.

Through interactions with the Campus Recreation department, students will learn about making healthy lifestyle choices, appreciate individual differences and similarities, and enhance their feelings of engagement, belonging, and loyalty.

Open Recreation

Half Acre, West Lobby
Phone: (307) 766-3370

Open Recreation provides recreational opportunities at two recreation facilities on campus: Half Acre Gymnasium which is centrally located next to the Wyoming Union, and Corbett building on the east campus. UW's Open Recreation program provides quality equipment for individuals to participate in non-organized, informal sport activities such as basketball, racquetball, volleyball, or badminton. Other activities that help reduce stress, promote physical fitness, and socialization with family or other members of the UW community include swimming, weight training, and aerobic training on a large variety of cardio exercise equipment or climbing on the indoor rock wall. Open Recreation also offers group fitness classes to complement use of the exercise equipment housed in Half Acre. For detailed information on fitness class content/fees or to register, stop by the service window in the lobby of Half Acre, pick up a Campus Recreation guidebook, or visit the Campus Recreation web site.

Intramural Sports

Half Acre, Second Floor North
Phone: (307) 766-4175

UW's Intramural Sports program offers organized individual and team competitive sport events in men's, women's, and co-recreational leagues. Students and employees can participate in organized recreation level sport competition in approximately 30 activities per semester such as flag football, soccer, inner-tube water polo, wallyball, wrestling, badminton, basketball, volleyball, or ping-pong. Information is available from the Intramural Office in person or by checking our web site (choose the Intramural link). Every member of the university community is encouraged to become familiar with the many aspects of intramural sports, which are designed to encourage participation and socialization regardless of previous experiences, sport skills, or group affiliation. Come alone or with a group to sign up for a fun time.

Club Sports

Half Acre, Second Floor North
Phone: (307) 766-6396

The Club Sports program offers a higher level of athletic sport competition than Open Recreation and Intramural Sports to UW students. Some of the current UW Club Sport teams for men and women include badminton, baseball, trap, volleyball, soccer, ice hockey, rugby, ultimate frisbee, cycling, Nordic ski racing, lacrosse, and fencing. UW faculty with an interest in coaching or officiating a club sport should contact the Club Sports Office. Visit our web site for more information on Club Sport teams and activities.

Outdoor Program

Half Acre, First Floor South Lobby
Phone: (307) 766-2402

UW's Outdoor Program (OP) offers a variety of outdoor experiences as well as training to use the indoor climbing wall. Participants have opportunities to develop lifetime recreational skills, gain an appreciation and concern for our natural environment, and meet new people. OP sponsors a variety of seasonal programs and outings throughout the year. These activities range from day and weekend trips to nearby destinations to extended trips at unique destinations. OP also runs clinics and sponsors guest speakers, presentations, and other educational programs. Activities are offered for all skill levels through such venues as back country ski outings, trail running, snowshoe outings, back country hiking and camping trips, or rock climbing. OP provides an extensive line of rental equipment to the campus community. The Outdoor Program staff is ready to expose the university community to a whole new realm of experiences not available anywhere else on campus. Visit our web site for more information on OP activities, services, and fees.

Dean of Students Office

David S. Cozzens, Dean of Students and Associate Vice President for Student Affairs
128 Knight Hall, (307) 766-3296
Web site: www.uwyo.edu/DOS

The Dean of Students Office (DOS) serves as UW's entry point for student support services. The staff in DOS work to enhance the quality of life for all UW students. Assistance with situational needs and student life concerns of individual students and groups of students regarding their personal, academic, and/or social welfare are coordinated by the DOS staff.

Several offices and programs comprise the Dean of Students Office. These include the Dean of Students, Multicultural Affairs, the Students' Attorney, Early Alert program, and Student Judicial Affairs, all located in Knight Hall. The Student Leadership, Greek Life, Multicultural Resource Center, STOP Violence Project, Rainbow Resource Center, ASUW Business Office, Nontraditional Student/Women's Center, and Student Media offices are located in the Wyoming Union.

Services available through the Dean of Students Office include individual advisement and consultation regarding situational student life concerns; referral coordination with other university and community services; conflict resolution and consultation regarding student conduct, rights, and responsibilities; advisement in grievance procedures, due process, and student appeals of disputed decisions; official university withdrawals; and authorized absences and emergency contacts.

DOS staff also have responsibilities as advisers to ASUW Student Government and/or student organizations including Panhellenic and Interfraternity Councils and Freshman Senate.

The professional staff provide direct assistance to students and groups at any time in the student's career at the university. Information, individual advisement and consultation, and assistance with administrative procedures are facilitated in the Knight Hall offices.

ASUW Business Office: A major component of ASUW student government is funding recognized student organization activities. The ASUW Business Office, whose staff are members of the Dean of Students Office, serves as a support unit to the financial undertakings of ASUW as well as providing training and leadership for students involved in fiscal matters of the student government.

Greek Life: The national fraternities and sororities at UW provide a living/learning environment designed to support the goals of their members. Through specifically designed programs, the coordinator of Greek Life facilitates personal growth, scholastic achievement, and leadership development, as well as being available for individual consultation. The Dean of Students Office also monitors the Greek Relationship Statement between UW and Greek chapters.

Student Conduct, Rights and Responsibilities: The Trustees, as a governing body of the university, are charged with the statutory duty and authority to make all rules and regulations including the administrative responsibility to regulate and control whatever conduct and behavior of the members of the university community impedes, obstructs, or threatens the achievement of the educational goals and mission of the university. The university community, in order to function in an orderly and creative manner, ascribes to a code of conduct to which the student must adhere. This information entitled *Rights and Responsibilities - "UW Student Code of Conduct"* is distributed to each student who is granted admission to the university. This information and other university regulations are published in order to inform students of their rights and responsibilities and the minimum ethical standard of conduct expected of them as members of the university community. Additional copies of this information may be obtained at the Dean of Students Office, from the assistant dean of students for judicial affairs, or on the web.

Student Media Office: The Student Media Office, is partially funded by student fees. It meets the informative, educational, and cultural needs of the university community through such publications as *The Branding Iron* (the daily student newspaper published Tuesday-Friday and weekly during the summer session), the literary magazine *Owen Wister Review* (published spring semester), and the new feature magazine *Frontiers* (published fall and spring semesters) which are published under the auspices of the Board for Student Media.

The board is composed of students, faculty, staff, and selected members of the Wyoming Press Association. These publications provide an excellent opportunity for students to gain valuable experience in newspaper, magazine, advertising, sales, and production.

For more information about student publications, contact the Student Media Office, Room 302, Wyoming Union, (307) 766-6190.

Students' Attorney: Legal services are provided to University of Wyoming students by a full-time attorney. This service is provided through student fees, and there is no additional charge for the attorney's time. The attorney assists students seeking advice in connection with personal legal problems. Information is readily available on a variety of subjects. The Students' Attorney Office also facilitates the effective and prompt handling of legal referrals, (307) 766-6347.

Student Legal Services Clinic: The Students' Attorney may refer fee paying students to this clinic for legal services that include but are not limited to domestic relations matters, including divorces, child custody and/or support disputes; domestic violence; and landlord/tenant disputes. The clinic cannot represent a student on any legal matter that involves another UW student, the University of Wyoming, or a recognized student organization. The clinic is located at 21st and Garfield Ave., (307) 766-4360.

Multicultural Affairs

Dolores Cardona, Associate Dean of Students
Dean of Students Office
114 Knight Hall, (307) 766-6228
Web site: www.uwyo.edu/oma

Multicultural Affairs, a part of the Dean of Students Office, serves under-represented groups in higher education at the University of Wyoming. It also provides leadership and advocacy to support diversity and to prepare students to interact in a diverse world. Multicultural Affairs helps UW create a campus climate supportive of the success of racial and ethnic minorities. Multicultural Affairs also provides opportunities for all students who are interested in diverse experiences, programs, and access to multicultural resources.

The Multicultural Affairs (MA) assists Hispanic/Latino, African-American, Asian-American, American Indian, biracial, and multiracial students to enroll in college, complete a college degree, enroll in graduate programs, increase employment potential following graduation, and assists all students with diversity information. MA provides information and services on financial aid, employment opportunities, internships, graduate schools, programming, general information and orientation, career exploration, tutoring, academic advising, referral services, as well as personal support and guidance. MA also assists the multicultural student organizations with their activities.

Multicultural Resource Center: The Multicultural Affairs-sponsored Multicultural Resource Center (MRC) is a student gathering place for social interaction, cultural and educational programming, and educational resources for study and research. The MRC is also a unique facility in the state of Wyoming which collects and displays materials reflecting the concerns of Hispanics/Latinos, African-Americans, American Indians and Asian-Americans. The MRC houses a permanent collection of books, periodicals, and academic equipment. The MRC provides a meeting place for groups concerned with these communities and is located in the Wyoming Union, Room 103. For more information call (307) 766-6463.

Associated Students of the University of Wyoming (ASUW)

020 Wyoming Union, (307) 766-5204
Web site: www.uwyo.edu/ASUW

The Associated Students of the University of Wyoming (student government) is comprised of three branches: the executive, legislative, and judicial. Students who pay fees are automatically members of ASUW. Officers and senators are elected annually by the students and are representative of each of the seven colleges. They meet weekly to consider areas of concern to students.

The ASUW student government represents student opinion to the administration, faculty, staff, and State of Wyoming legislature. ASUW membership on university committees and legislative statements of student opinion passed by the ASUW Senate ensure that university policies are made with the concerns of students in mind. In addition, the ASUW president serves as an ex-officio member of the University of Wyoming Board of Trustees and conveys student opinion to the institution's highest governing body.

ASUW is also one of the vehicles through which students provide their own programs of activities and services. Included in these programs are ASUW activities committees, concerts and convocations, ASTEC (technical services), ASUW Gallery (art gallery), and student transportation services, all located in the Wyoming Union; the Students' Attorney Office in Knight Hall; and child care services.

Student Health Service

Joanne Steane, M.D., Director
Health/Student Building, (307) 766-2130
Web site: www.uwyo.edu/ShSer

The Student Health Service (SHS) provides personalized health care to eligible students by maintaining a high quality medical outpatient clinic. The clinic provides primary health care, health education, and preventive services to enable students to complete their course of studies. The professional staff consists of four physicians, one nurse practitioner, one physician assistant, a registered pharmacist, registered nurses, and a registered X-ray Technologist, in addition to other professional and administrative personnel. The Student Health Service offers specialist clinics for orthopedics and psychiatry.

Undergraduate and professional full-time students taking 12 or more credit hours and graduate students taking 9 or more hours are eligible for services at the SHS. Undergraduate and graduate part-time students who have purchased the optional benefit package are also eligible. Enrollment in, or waiver from, the University of Wyoming Student Medical Insurance Program has no effect on eligibility to use the Student Health Service. Students enrolled during the summer pay a summer fee for SHS. Students not enrolled for summer but who were enrolled spring semester and are pre-registered for fall semester may pay the same summer fee to be eligible to use the SHS. Laboratory and X-ray diagnostic procedures, medications, specialty clinics, and office procedures are available. There are affordable charges for these services. There are also nominal charges for supplies such as ace bandages, splints, crutches, and other medical devices.

The Student Health Service is open from 8 a.m. to 5 p.m. Monday through Wednesday and Friday and 9 a.m. to 5 p.m. on Thursday during the fall and spring semesters. During Christmas and spring breaks, the SHS is open from 8 a.m. to noon and 1 p.m. to 5 p.m. weekdays. Summer hours are 7:30 a.m. to noon and 1 p.m. to 4:30 p.m. weekdays. Hours are subject to change to reflect the needs of the university. The Student Health Service is closed on university holidays and weekends. An after-hours nurse advice line is available when the SHS is closed by calling 766-2130. All students are urged to have adequate health insurance coverage for illnesses or emergency visits to the local hospital or a physician's office when the Student Health Service is closed. Insurance coverage is also recommended for medical care that is not available at the Student Health Service, including treatment of major injuries, surgery, and hospitalization. The student is responsible for all charges for services provided by persons or institutions outside of the Student Health Service.

Wellness Center: The Wellness Center, located in Half Acre Gym, promotes "a university community in pursuit of optimal learning." Open between the hours of 8 a.m.-4 p.m. weekdays (hours subject to change) the Wellness Center offers wellness screening, referrals, TestWell Wellness Inventory, and information about many health topics. Fitness and nutrition counseling, anonymous HIV testing, and the services of an athletic trainer and massage therapist are available by appointment. The Wellness Center services are available to all students.

University Counseling Center

Dan W. Socall, Ph.D., Director
341 Knight Hall, (307) 766-2187
Web site: www.uwyo.edu/UCC

The University Counseling Center (UCC) provides comprehensive, time-effective mental health services to the university students and community. The UCC is a resource center for students to enhance personal success skills in dealing with the challenging and sometimes stressful university environment. The professional UCC staff work together with students to help them find effective ways to approach concerns and problems. We also support students in learning to make healthy lifestyle choices that promote their personal, social, and academic goals. Group and individual counseling services, in a professional and confidential atmosphere, are provided to students with personal and interpersonal concerns. Other services include crisis intervention, consultation, and education to the UW community. Individual counseling appointments are made in person during regular office hours, 8 a.m. - 5 p.m. Monday through Friday. Counseling services are free to UW students. For after-hour emergencies, students can talk to an on-call counselor by calling 766-8989.

Campus Consultation and Outreach: UCC staff consults with academic and student services personnel, student leaders, and university administration regarding counseling and mental health issues and ways to better the UW living/learning environment. Outreach programs can be initiated by student or staff request or by UCC staff bringing issues of concern to various campus populations. Some current issues include date rape and suicide prevention, respect for diversity, sexual orientation issues, and stress management. Generally, UCC asks for a minimum of two weeks notice for an outreach presentation, however, in urgent situations triggered by trauma, outreach programs will be offered on a shorter notice.

AWARE (Alcohol Wellness Alternatives, Research and Education): The AWARE Program is committed to a healthy campus community and a drug-free learning environment. AWARE Program staff strive to utilize the best practices in providing drug and alcohol education and prevention programming for the University of Wyoming campus and community. The AWARE Program promotes a standard of wellness in regard to healthy choices surrounding alcohol use and the prevention of illicit drug use by college students. To achieve these goals, the AWARE Program offers a broad range of services ranging from individual interventions to consultative and educational services for campus groups and the community at large. AWARE also coordinates the Cowboy CHOICES 180 Proof Peer Education group. Additionally, the AWARE Program coordinates the UW A-Team, a campus-community coalition dedicated to reducing underage and excessive alcohol use. For more information, please visit the web site at www.uwyo.edu/aware or feel free to contact via telephone at (307)766-2187, email (aware@uwyo.edu), or in person by visiting 341 Knight Hall.

STOP Violence Program: The mission of the STOP Violence Program is primarily to prevent domestic/relationship violence, sexual assault and stalking on the campus of the University of Wyoming. Prevention efforts focus on education about domestic/relationship violence, sexual assault and stalking. Programming is delivered to students, faculty and staff.

Another focus of the STOP Violence Program's mission is providing support and resources if a student becomes the victim of violence. One resource is an on-campus advocate, who can help a student access services available through other university departments or off campus agencies. Support is also offered by providing information to these students, their friends and families, about the effects of domestic/relationship violence, stalking or sexual assault.

STOP is located on the 2nd floor of Knight Hall. Office Hours are 8 a.m. to 5 p.m. weekdays, (307) 766-2170. For after hours emergencies, please call (307) 745-3556 (The Albany County Safe Project in Laramie).

Residence Life, Dining Services, and Wyoming Union

Residence Life & Dining Services

Beth McCuskey, Executive Director
Washakie Center, Lower Level, (307) 766-3175
Web site: www.uwyo.edu/reslife-dining

Residence Life & Dining Services provides comfortable, clean, and affordable housing and dining for students that is conducive to students' personal and academic development. The university operates six furnished residence halls and a variety of furnished and unfurnished apartments.

New Student Live-in Policy: The UW Trustees have established a policy requiring all new students to live in the UW residence halls during their first academic year on campus and to take a minimum of the 12-accesses-per-week dining plan. The policy is based on extensive student development research indicating that a student's chance of academic success and satisfaction with the college experience greatly improves through the residential living experience.

For a student to be considered for an exemption to the policy, a request with appropriate documentation must be sent to the Executive Director, Residence Life & Dining Services, Dept. 3394, 1000 E. University Ave., Laramie, WY 82071. Students will be considered exempt from the policy if they can provide documentation for one of the following:

- 21 years of age or older
- Married
- Single parent with custody of child(ren)
- Reside with parent(s) or legal guardian(s) within a 60-mile radius of Laramie or in a property purchased by parent(s) or legal guardian(s)
- Completion of two semesters as a full-time student or the equivalent credit hours at UW, or another university or college
- Have documented medical or health conditions prohibiting residence hall living

Students must apply for exemption prior to 5 p.m. June 30th. Housing accommodations at the University Apartments may be available for students who have children or minors living with them.

Residence Halls: The residence halls provide convenient living, studying, and dining accommodations for the university community. Various living environments are available. Professional staff and trained resident assistants are available to all students to help make residence hall living an enjoyable and productive part of campus life. The residence halls also provide laundry facilities, study rooms, and access to computer labs for the use of hall residents. University computer network access is available in each room.

Room assignments are made according to the date the completed contract form and \$100 security deposit are received in the Residence Life & Dining Services office. Hall, roommate, and other preferences may be indicated on the contract and will be considered. Students wishing to room together should submit contracts together prior to the posted deadline of May 1.

Dining Services: A variety of dining plans, services, and payment options are offered for both on- and off-campus students, faculty, and staff. Dining plans are identified by the number of times a customer may enter Washakie Dining Center per week. Additional PLU\$\$ dollars can be added to any dining plan, allowing for additional meals and services at dining locations across campus.

All students living in the residence halls may choose between the “Unlimited-,” any 15-, or any 12- dining plan. Meals are served during the contract periods for each semester. Limited services will be available over Thanksgiving and Spring Break.

Dining plans are not just for students living in the residence halls. Any student, staff member, or faculty member can purchase one of the varieties of dining plans designed to fit their needs.

The Washakie Dining Center is an all-you-care-to-eat dining facility for students, faculty, and staff. Meals at the Washakie Dining Center can be purchased in several ways. A UW Student ID card can be used to access dining plan meals, PLU\$\$ dollars, or cash previously deposited to the holder’s WyoOne account. Credit cards (VISA and MasterCard) and cash are also accepted.

In addition to Washakie Dining Center, a variety of convenient and affordable dining options are located in the Wyoming Union and throughout campus to further meet the dining needs of busy students. These locations offer customizable menu selections and extended dining hours. These dining locations accept PLU\$\$, WyoOne card funds, Mastercard and Visa.

For specific information related to room and dining plan rates, contract terms and conditions, dates of availability, or other questions, please contact Residence Life & Dining Services at (307) 766-3175 or toll free at (866) 653-0212 or email at reslife-dining@uwyo.edu. Those admitted to the university are encouraged to apply for a room and board contract online at www.uwyo.edu/reslife-dining.

University Apartments: The university provides one-, two-, and three-bedroom furnished or unfurnished apartments for students, faculty, and staff. Located on the east side of campus, the apartments are near the golf course, shopping centers, recreational areas, and the hospital. The apartments also offer children’s programs and a community center.

Apartment assignments are made on a year-round basis. The date an application is received is used in determining assignment priority. Requests should be made as early as possible after acceptance to the university.

Application forms and additional information about apartment rates, availability, and eligibility guidelines may be obtained by contacting the University Apartments Office, 2413 Arrowhead Lane #369, Laramie, WY 82072, (307) 766-3176 or toll free at (866) 653-0212, or email at reslife-dining@uwyo.edu.

Off-Campus Housing: The university assumes no responsibility for the students’ choice of off-campus living environment. Students living off-campus are encouraged to contract for meals with Residence Life & Dining Services.

For additional information about the residence halls, dining plans, or university apartments visit www.uwyo.edu/reslife-dining; call toll free (866) 653-0212; or if in Laramie, (307) 766-3175 (residence halls) or 766-3176 (university apartments); FAX (307) 766-3613 or email at reslife-dining@uwyo.edu. Information may also be obtained by writing to Residence Life & Dining Services, Dept. 3394, 1000 E. University Ave., Laramie, WY 82071.

Wyoming Union

Darcy DeTienne, Director

001 Wyoming Union, (307) 766-3765

Web site: www.uwyo.edu/Union

The Wyoming Union is the community center for campus life, enhancing and complementing out-of-class educational experiences. Open daily, the Union provides facilities, services, and various activities to all of the campus community.

The Wyoming Union has a number of services available. A variety of food services are located on the main level as well as CJ’s Convenience Store, the Copy Center, Union Information Desk/Ticket Office, UW Bookstore, a computer lounge, the Multicultural Resource Center, the Nontraditional/Women’s Center, Rainbow Resource Center, STOP Violence Project, and First Interstate Bank. The Campus Activities Center, Union administrative offices, ASUW Student Government, Student Leadership and Civic Engagement Office, Center for Volunteer Service, ASUW Gallery, ASTEC (Associated Students Technical Services), Greek Affairs office, computer lab, rec center, program lounge, and the Gardens (coffee/beverage bar) are located on the lower level.

The Wyoming Union Information Desk offers campus as well as community information and ticket sales. Union Food Service provides meals, snacks and catering service. The Union’s conference and meeting facilities include rooms of various sizes and a large ballroom. For reservations and information on these services, contact the Events Office at (307) 766-3161.

Campus Activities Center

The Campus Activities Center (CAC) serves as the hub of student activities on campus. Professional staff in the office offer guidance and assistance for ASUW appointed programming committees, late-night programming efforts, volunteer services, more than 200 recognized student organizations, and student leadership development.

Recognized student organizations at the University of Wyoming are established to promote a learning and social experience for individuals who share common interests. Students are encouraged to join and are free to organize associations that will provide opportunities to participate in educational, academic, cultural, and social activities. The staff in the Campus Activities Center is available to help groups of students develop organizations, sponsor activities, and coordinate efforts with other entities on campus. A complete listing and descriptive classification of all current recognized student organizations is available from the CAC and online at www.uwyo.edu/cac.

The CAC is also home to a number of campus-wide programming committees. These include:

- Friday Night Fever (coordinating free alternative programming every Friday night and some Saturdays)
- The ASUW Student Activities Council (SAC – coordinating free quality entertainment and activities for all students throughout the academic year)
- The ASUW Homecoming Committee (coordinating UW’s annual homecoming celebration)
- The ASUW Concerts and Convocations Committee (coordinating big-name entertainment at an affordable ticket price)

Students who participate in the leadership of any of these committees or organizations gain valuable hands on experience in negotiation, programming, problem solving, marketing, public speaking, teamwork, and leadership, as well as opportunities for personal growth.

Center for Volunteer Service

The Center for Volunteer Service (CVS) facilitates the development of volunteerism and leadership opportunities by connecting students, staff, and faculty with volunteer opportunities within Laramie and across the region and nation.

All students are welcome to stop at the Center for Volunteer Service in the lower level of the Union to see how they can get involved. Students may also visit the CVS web site at www.uwyo.edu/uwvolunteers.

The Center for Student Leadership and Civic Engagement

The Center for Student Leadership and Civic Engagement (SLCE) is a new office located on the lower level of the Wyoming Union. Born of a unique collaboration between the Dean of Students Office and the Wyoming Union, SLCE is predicated on the notion that universities have a responsibility to prepare all students for active citizenship. A healthy American democracy demands ethical, engaged leadership, and SLCE seeks to cultivate these ideals among our UW students. Students are invited and encouraged to visit the office in Room 011.

Office of Alumni Affairs

The Office of Alumni Affairs is the primary link between UW and its former students. To foster loyalty to UW, the office - through the UW Alumni Association - coordinates alumni and volunteer programs and events, alumni social events throughout the nation, annual Homecoming activities, alumni recognition programs, the UW specialty license plate program, and alumni scholarship fundraising and selection efforts. Located in an historic Laramie home on the south side of the campus at 14th Street and Grand Avenue, the office serves to welcome alumni visitors returning to the campus. In addition, the office publishes the *Alumnews* four times a year to keep alumni and friends informed of issues and activities related to the university and former students.

Cowboy Parents

408 Old Main • 307-766-5294

Web Site: www.uwyo.edu/cowboyparents

Cowboy Parents (formerly Associated Parents of the University of Wyoming) is an organization that provides parents and families with their own University of Wyoming connection serving as a conduit for information and assistance. Cowboy Parents provides opportunities for families to get involved with the goal of promoting student success while also providing the institution with a unique perspective from parents and families. Cowboy Parents provides email updates, frequent and timely publications, a toll-free hotline, and much more. Parents and families of enrolled UW students are automatically members of Cowboy Parents and membership is free.

Other University Services

University Bookstore

Shaun Ziegler, Manager
Wyoming Union, 1-800-370-2676, (307) 766-3264,
TTY: (307) 766-3267
Web site: www.uwyobookstore.com

The Bookstore is a self-supporting university department founded in 1921. It provides students, faculty, staff, and campus visitors with a variety of products and services. In order to fulfill its primary mission, the bookstore stocks new and used textbooks, general books, school supplies, office products, educationally priced computer software, fine art supplies and electronics. As a convenience, the Bookstore also stocks additional items such as gifts, insignia gifts and clothing, greeting cards, candy and sundries. Services the Bookstore provides include prepaid textbook reservations, bookbinding, special order book service, cap and gown rental, used book buy back, and postage stamps, as well as UPS, FAX and Federal Express.

The Bookstore is located on the main level of the Wyoming Union. Hours of operation during the academic year are: 7:30 a.m. to 5:00 p.m., Monday through Friday; 10:00 a.m. to 2:00 p.m., Saturday.

Music

David Brinkman, Department Head
258 Fine Arts Center, (307) 766-5242
Web site: www.uwyo.edu/music

The Department of Music offers many opportunities for students to participate in musical activities as well as to hear concerts by faculty artists, student ensembles and visiting artists. All qualified students within the university, no matter their major, are invited to participate for credit in any of the following: Marching Band, Symphonic Band, Wind Ensemble, Symphony Orchestra, Chamber Orchestra, Collegiate Chorale, Opera Theater, Jazz Band, Bel Canto, Singing Statesmen, Civic Chorus, and the many smaller ensembles such as string ensembles, brass ensembles, percussion ensemble, and various chamber groups. Note: some ensembles are by audition only. Private lessons on any instrument and voice are available at a fee to all interested students.

Summer offerings may include lessons, attractive workshops, seminars, and regular courses. A summer music camp for students in grades 7 through 12 is also offered which includes band, choral, orchestral and keyboard experience culminating in gala concerts. For further information, please write to the Department of Music, Dept. 3037, 1000 E. University Ave., Laramie, WY 82071.

Theatre and Dance

Leigh Selting, Department Head
205 Fine Arts Center, (307) 766-2198

Theatre and Dance at the University of Wyoming offers students an excellent opportunity to participate in all aspects of theatre and dance arts. Auditions for productions are open to all qualified students within the university regardless of major or college. The production program provides opportunities for students to participate in technical theatre stage crews, set construction, costuming, lighting and sound. There are also opportunities to perform dance, drama, musicals and operas. Playwriting, screen writing, directing and choreography are available through upper-division courses. The Fine Arts Center contains a proscenium theatre, an experimental theatre, an acting for the camera studio and a dance studio, plus full support facilities for scene and costume construction. Full-time university students may purchase tickets through the Fine Arts Ticket Office at a greatly reduced price.

University Police Department

Troy Lane, Chief of Police
Ivinson Building, (307) 766-5179
Web site: www.uwyo.edu/UWPD

The University Police Department is responsible for crime prevention, public safety, and law enforcement in the UW community. The department is staffed by 13 certified peace officers, four security guards, and eight full-time staff members. All officers are fully trained and have arrest authority. The department operates 24 hours per day, 365 days a year. To keep members of the UW community aware of police activity on campus, the department maintains a chronological log of all incidents reported to the department. This log is made available to news media and is open for public inspection through the UWPD web site. University crime reports are also included annually in the United States Department of Justice publication, Crime in the United States. Crime statistics, as well as other public safety information, are included in the annual Public Safety Report, which is available online. Free informational pamphlets on topics such as theft, sexual assault, drug and alcohol abuse, and harassing phone calls are available from the department. In addition, department personnel present public safety programs upon request to any group or organization. Further information is available through the UWPD World Wide Web site.

Traffic and Parking Regulations For parking information see the TransPark web site at www.uwyo.edu/tap.

Bicycle Regulations The University of Wyoming Bicycle Program was developed to promote an environment in which bicycles, pedestrians, and motor vehicles can safely co-exist. Persons riding bicycles are asked to familiarize themselves with the regulations and bike paths described in the pamphlet *Safe Cycling at UW*, which is available on the University Police Department web site. All bicycles must be registered.

University of Wyoming Alumni Association

Robbie Darnall, Executive Director
214 South 14th Street, Alumni House, (307) 766-4166
Web site: wyoalumni.com

The University of Wyoming Alumni Association has been serving the university and alumni since the association was first organized in 1895.

The Alumni Association currently serves more than 100,000 former students of the University of Wyoming, offers scholarships to outstanding high school seniors and Wyoming community college transfer students as well as UW juniors, seniors, graduate, Outreach, and non-traditional students. UWAA promotes faculty excellence and development with its annual Outstanding Faculty Award. The Outstanding Faculty Award was created for graduating seniors who wish to nominate a teacher/professor who made a difference in their college careers.

The Alumni House is located at 214 South 14th Street and serves as a campus information center for current and former students, their families and friends of the university. The Alumni House also serves as an official outlet for UW class rings and other campus memorabilia and gifts.

The Wyoming Student Alumni Association (WyoSAA) works to increase student awareness of what the Alumni Association means to the university. Each year WyoSAA also sponsors the UW Homecoming Parade and senior send-off.

University Outreach Programs

University Outreach Mission

The University of Wyoming is dedicated to providing teaching, research and service to the people of Wyoming across the state, as reflected in the mission statement of the university: The University of Wyoming will provide coordinated service to the people of Wyoming through credit and noncredit instruction, lifelong learning, professional and cultural programming. As a part of outreach, the university will disseminate widely the results of its basic and applied research, and, when appropriate, direct research to meet economic, social and cultural challenge faced by the state and nation.

Outreach Units

The University of Wyoming serves the state through its two outreach units, each of which is an integral part of the university's mission. The two units consist of the Cooperative Extension Service and the Outreach School.

Cooperative Extension Service

Glen Whipple, Director
103 Agriculture Building, (307) 766-5124

The 1914 Smith-Lever Act created the Cooperative Extension Service, stating that its purpose was to "provide instruction and practical demonstrations in agriculture, home economics and related subjects." The University of Wyoming Cooperative Extension Service is part of a national educational network which establishes partnerships with the United States Department of Agriculture, the state of Wyoming, the University of Wyoming, and county and tribal governments. UW Cooperative Extension maintains offices in 27 Wyoming communities.

The mission of the University of Wyoming Cooperative Extension Service (UW CES) is to provide lifelong learning opportunities for the people of Wyoming and empower them to make choices that enhance their quality of life. To accomplish its mission, the UW CES continually updates its programs to meet the changing priorities, organizational structures and external relationships of Wyoming and its citizens. It is a dynamic organization pledged to providing educational programs which enable Wyoming citizens to improve their lives and communities through partnerships that put experience and research knowledge to work. The UW CES delivers university research-based knowledge to Wyoming consumers through the broad program areas of Profitable and Sustainable Agricultural Systems, 4-H and Youth Development, Nutrition and Food Safety, Sustainable Management of Rangeland Resources, and Community Development Education. Programs include a wide range of topic areas, including food and nutrition, water quality, wildlife, crop production, and resource management.

UW CES can be accessed on campus through its administrative offices in the College of Agriculture. In the state, UW CES offices are found in each county and serve as resources to the county, while also representing a major connection between the university and the people of Wyoming.

Outreach School

Maggi Murdock, Ph.D., Dean and Associate Vice
President for Academic Affairs
R. Scott Seville, Ph.D., Associate Dean and Professor of Zoology
and Physiology
Brent Pickett, Ph.D., Associate Dean and Director, UW/CC Center
W. Reed Scull, Ed.D., Associate Dean and Director, Outreach Credit
Programs
Dept. 3106, 1000 E. University Ave.
Laramie, WY 82071
333 Wyoming Hall, (307) 766-3152
Web site: outreach.uwyo.edu

The mission of the Outreach School is to extend the University of Wyoming's educational programs to people in the state of Wyoming and beyond with innovative and unique opportunities for learners of many ages, interests, locations, and motivations. Our programs and services are organized under five units, with UW Outreach Regional Centers located in communities throughout Wyoming.

The five units of the Outreach School working in partnership to deliver a broad spectrum of UW programs are:

Division of Outreach Credit Programs

W. Reed Scull, Ed.D., Associate Dean and Director
Web site: outreach.uwyo.edu/ocp

The University of Wyoming was the first university west of the Missouri to offer correspondence courses. For nearly a century UW has sent its faculty across the state to meet with citizens, students, teachers, business owners, ranchers, and farmers to help them learn. Today the Division of Outreach Credit Programs, in partnership with the university's colleges and departments, extends the university learning experience to students across the nation with audio conferencing, video conferencing, correspondence study, and Web-based instruction.

Using on-site, online, and mediated instruction, the division offers baccalaureate degree completion programs as well as certificate and graduate degree programs. Upper division undergraduate- and graduate-level courses are also offered to satisfy continuing professional education requirements or to meet requests for professional development. The division also offers a wide variety of educational opportunities for teachers in collaboration with the College of Education and school districts.

Undergraduate Majors

- Accelerated BSN
- Bachelor of Applied Science
- Business Administration (online)
- Criminal Justice
- Elementary Education
- Family and Consumer Sciences (online)
- Psychology
- RN/BSN completion (online)
- Social Science

Undergraduate Minors

- Women's Studies

Graduate Majors

Adult and Post-Secondary Education (online)
Executive Master of Business Administration (online)
Educational Leadership
Instructional Technology (online)
Kinesiology and Health
Nursing—Nurse Educator (online)
Public Administration
Special Education
Teaching and Learning
Speech-Language Pathology
Social Work

Certificate Programs

Family and Consumer Sciences (online)
Land Surveying
Health and Medical Social Work
Rural Behavioral/Mental Health Social Work

Endorsement Programs

Early Childhood, Birth to Five Endorsement
Early Childhood, Special Education Endorsement
Literacy Program, leading to Reading Endorsement
Principal Endorsement

Audio conferencing uses long-distance telephone lines and a centrally-located audio conferencing bridge to link as many as 96 class sites at a time. These courses usually can be delivered to any location at which there is a telephone line, provided at least three students are enrolled at each site. If a course is offered statewide or nationwide, students in any location may take the course as long as there is sufficient enrollment at that site. Audio conferencing courses may include recorded lectures as well as an online component that provides a number of communication and information sharing tools.

Video conferencing is an interactive technology enabling students at each site to see and hear each other and their instructor. Video conference courses can be delivered to specific sites in Wyoming, provided at least three students are enrolled per site with a total enrollment of 25 students. Video conference courses may include an online component.

Web-based courses are available “anytime, anyplace.” They are, however, semester-based and often include specific times for student and faculty dialogue. Learning online is interactive and collaborative; students generally need to be online in class a few times each week throughout the semester. Students and instructors share discoveries and materials throughout each developmental step of the course using online communication tools such as e-mail, threaded discussions, document sharing, and live chat sessions. Outreach Credit Programs offers the following types of web-based instruction: Internet and Online UW.

Hybrid courses are delivered through a combination of web-based instruction and one or more other delivery methods.

Correspondence study courses, or print-based courses, meet the needs of site-bound students by offering a variety of study opportunities. These courses are designed to provide flexibility with open enrollment throughout the year, a more self-paced and independent study format, and nine months to complete each course. To enroll in a correspondence study course, it is not necessary to be admitted to the university.

For further information, contact the Division of Outreach Credit Programs, Dept. 3274, 1000 E. University Ave., Laramie, WY 82071; (800) 448-7801; or e-mail: ocp@uwyo.edu

University of Wyoming/Casper College Center

Brent Pickett, Ph.D., Associate Dean and Director
125 College Drive, Casper WY 82601
(307) 268-2713
Web site: www.uwyo.edu/uwcc

For more than 30 years the University of Wyoming/Casper College Center (UW/CC), in partnership with Casper College, has offered on-site courses and a slate of university degree programs in Casper. The UW/CC Center is also the location in Natrona County for statewide degree programs and classes offered through Outreach Credit Programs.

The UW/CC Center was established to meet the needs of students unable to move to Laramie. Some of these students are nontraditional students who may be older or have families, homes, or jobs in the Casper area. The center is designed to meet the academic needs of students in a setting providing small classes, dedicated staff, and award-winning faculty. Courses are taught by resident and visiting faculty who are regular or part-time members of UW academic departments. A full-service office handles admission, registration, financial aid, and advising.

Classes are taught on-site at the Casper College campus and at the UW Outreach Building, which is located separately from Casper College. The Outreach Building is also a site for statewide classes and degree programs via video conferencing and audio conferencing. Audio and video technologies are also available on the Casper College campus.

An average of more than 700 students enroll in UW courses and degree programs through the UW/CC Center each semester, and more than 3,000 students have received their UW degrees.

Undergraduate Majors

Biology
Business Administration
Communication
Criminal Justice
Elementary Education
Family and Consumer Sciences
Humanities and Fine Arts
Journalism
Mathematics and Science
Organizational Leadership
RN/BSN completion (online)
Psychology
Secondary Science Education, Biology
Social Science
Social Work
Technical Education

Graduate Majors Offered

Adult and Post-Secondary Education
Business Administration
Counseling
Curriculum and Instruction
Educational Leadership
Instructional Technology
Kinesiology and Health
Nursing—Nurse Educator
Public Administration
Social Work
Special Education
Speech-Language Pathology
Teaching and Learning

Certificate Programs Offered

Early Childhood Program Director
Land Surveying

Endorsements

Early Childhood, Birth to Five
Early Childhood, Special Education
Principal
Wyoming Reading

For more information, contact the UW/CC Center at 125 College Drive, Casper, WY 82601; (307) 268-2713, (877) 264-9930; or e-mail: os-uwcc@uwyo.edu.

Center for Conferences and Continuing Education

Sheila Couture, Director

Web site: outreach.uwyo.edu/service

The Center for Conferences and Continuing Education supports the mission of the Outreach School by anticipating and responding to the educational needs best served by conferences and institutes, events planning, enrichment courses, and special programs.

Office of Conferences and Institutes Conferences and Institutes helps professional associations and organizations plan and coordinate conferences, workshops, seminars, continuing education programs, and Internet conferences. Complete conference services include a state of the art software scheduling program that provides secure online pre-registration, on-site registration, consultation, marketing, web page development, financial management, arrangement of accommodations and meeting facilities, catering options, video conferencing, audiovisual equipment, and post-conference wrap-up. The office also provides assistance in arranging for continuing education units or a credit option through Outreach Credit Programs.

Office of Events Planning The Events Planning Office on the UW campus is a one-stop shop for campus-wide space reservation and event coordination. The core support services include: facilities scheduling, contract negotiation, consolidated billing, master calendar listings, public relations calendar, recruitment, and community business networking. The office works closely with local businesses including travel agencies, hospitality establishments, restaurants, and retailers to assemble competitive pricing and incentive packages for groups and organizations considering Laramie as the location for their events.

Office of Community Enrichment Programs Community Enrichment Programs offers courses encompassing both personal and professional interests in areas such as personal development, professional renewal, recreation and fitness, business, dance and music, arts and crafts, and photography. Numerous online opportunities are offered including test preparation courses, certificate programs, business seminars, and classes on law, health care, medicine, software usage, and computer testing skills. Enrichment courses provide lifelong learning opportunities in informal, noncompetitive settings. A class schedule is distributed three times a year and registration is ongoing until a class is full or a session begins.

Office of Special Programs Special Programs offers customized training and programs designed to meet specific needs of various groups. Programs include customized business training, workshops and retreats, travel programs and tours, trainer consulting services, customized on-line testing and training, and various delivery methods of such training throughout Wyoming.

For further information, contact the Center for Conferences and Continuing Education, Dept. 3972, 1000 E. University Ave., Laramie, WY 82071; (877) 733-3618 or (307) 766-5641; or e-mail: cse_dir@uwyo.edu.

Division of Outreach Technology Services

Mike McElreath, Director

Web site: outreach.uwyo.edu/ots

The Division of Outreach Technology Services (OTS) provides technological support for the programs and services offered through the Outreach School. The division units are University of Wyoming Television (UWTV), Outreach Engineering, and Computer Support Services. OTS, in partnership with UW's IT Division, manages and operates the Outreach Video Network (OVN) at 47 sites in 21 communities statewide. The division also manages the Wyoming Equality Network video sites.

UWTV provides full professional services for television and videotape production, programming, and distribution. These services also include streaming video, satellite downlinking, video conferencing, and video/DVD duplicating. Instructional TV conferencing classrooms on the Laramie campus are utilized primarily for Outreach credit courses. UWTV's production facilities include a full production studio, several single cameras for on-location productions, three Avid edit suites, and video duplicating in VHS and DVD formats for distribution. All of the above are available to government clients, educational institutions, and non-profit organizations at modest rates. UWTV accepts commercial clients at appropriate rates.

For further information, contact the Division of Outreach Technology Services, Dept. 3106, 1000 E. University Ave., Laramie, WY 82071; (307) 766-4999; mikem@uwyo.edu.

Wyoming Public Media

Jon Schwartz, General Manager
 Web site: wyomingpublicradio.net

Wyoming Public Media (WPM) delivers four radio streams to residents of Wyoming and beyond, as well as internet streaming, podcasts, and web information services via wyomingpublicmedia.net. Wyoming Public Radio (WPR) is its primary service and is the state's only National Public Radio member. WPR has been serving Wyoming for over 40 years with news, music, and entertainment, now with 25 stations and translators statewide. WPM also operates full-time jazz and classical radio stations in Laramie, plus HD2 digital-only classical music channels in Casper and Jackson; and an HD2 full-time folk music channel in Laramie and Cheyenne.

WPR Stations and Translators

Afton	91.3	KUWA	Laramie Classical	88.5	KUWY
Alta/Driggs, ID	91.3	KUWR	Laramie Jazz	90.1	KUWL
Buffalo	90.5	KBUW	Newcastle	90.5	KUWN
Casper	91.3	KUWC	Pinedale	90.9	KUWX
Cheyenne	91.9	KUWR	Powell	90.1	KUWP
Cody	90.1	KUWP	Rawlins	89.1	KUWR
Douglas	91.7	KDUW	Rawlins	89.9	KUWI
Dubois	91.3	KUWR	Riverton	90.9	KUWR
Evanston	93.5	KUWR	Rock Springs	90.5	KUWZ
Gillette	90.9	KUWG	Sheridan	91.3	KSUW
Green River	90.5	KUWZ	Sundance	91.5	KUWD
Jackson	90.3	KUWJ	Thermopolis	91.3	KUWT
Lander	91.9	KUWR	Torrington	89.9	KUWR
Laramie	91.9	KUWR	Worland	91.3	KUWT
Jackson	90.3	KUWJ	HD2 Classical		
Laramie	91.9	KUWR	HD2 Folk		
Cheyenne	91.9	KUWR	HD2 Folk		
Casper	91.3	KUWC	HD2 Classical		

For further information, contact Wyoming Public Media at Dept. 3984, 1000 E. University Ave., Laramie, WY 82071; (307) 766-4240 in Laramie, or (800) 729-5897 within Wyoming.

UW Outreach Regional Centers

An academic coordinator administers each Outreach Regional Center. These individuals are responsible for coordinating adult education and educational activities sponsored by the university and the Outreach School.

NORTHEAST REGIONAL CENTER—SHERIDAN

Campbell, Crook, Johnson, and Sheridan Counties (at Sheridan College)
 Box 1500, Whitney Building, #121C Sheridan, WY 82801
 (307) 674-6446, ext. 4551

NORTHEAST REGIONAL CENTER—GILLETTE

300 West Sinclair, Gillette, WY 82718
 (307) 686-0044

NORTHWEST REGIONAL CENTER—POWELL

Big Horn, Park, and Washakie Counties (at Northwest College)
 231 West 6th Street, Powell, WY 82435
 (307) 754-6108

NORTHWEST REGIONAL CENTER—CODY

1501 Stampede Ave., Cody, WY 82414
 (307) 587-9837

SOUTHEAST REGIONAL CENTER

Laramie and Platte Counties (at Enterprise Center)
 Laramie County Community College
 1400 East College Drive, Cheyenne, WY 82007
 (307) 632-8949

EASTERN REGIONAL CENTER

Converse, Goshen, Niobrara, and Weston Counties
 at Eastern Wyoming College
 3200 West "C" Street, Torrington, WY 82240
 (307) 532-8204

SOUTHWEST REGIONAL CENTER

Carbon, Lincoln, Sublette, Sweetwater, and Uinta Counties
 at Western Wyoming Community College
 2500 College Drive, Box G-340, Rock Springs, WY 82901
 (307) 382-1817

WEST CENTRAL REGIONAL CENTER—RIVERTON

Fremont, Hot Springs, and Teton Counties
 2725 West Main Street, Riverton, WY 82501
 (307) 856-8651

WEST CENTRAL REGIONAL CENTER—JACKSON

240 S. Glenwood, Center for the Arts Bldg., Jackson, WY 83001
 (307) 734-0224

NATRONA COUNTY—UW/CC CENTER

125 College Drive, Casper, WY 82601
 (307) 268-2398

Special Programs and Facilities for Research and Study

The Libraries

Mary M. Farrell, Dean

William Robertson Coe Library, (307) 766-3279

The University Libraries include the William Robertson Coe Library, housing general reference, humanities, social science, psychology, medicine, and education materials, as well as government publications and maps; the Library Annex, located in the basement of the Biological Science Building; the Brinkerhoff Earth Resources Information Center, located in the S.H. Knight Geology Building; the Learning Resource Center, located in the Education Building; the Rocky Mountain Herbarium Research Collection, located in the Aven Nelson Building; the Grace Raymond Hebard Collection located in the American Heritage Center; and the National Park Service Research Center collection in Jackson, Wyoming. The UW/Casper College Center is served by the Casper College Goodstein Foundation Library.

The libraries' cataloged collections total nearly 1.5 million volumes, with over 35,000 volumes added annually. 14,000 active periodical and serial titles are supplemented with access to over 57,000 unique electronic journals. In addition, the libraries provide extensive microforms collections and a library of over 169,000 maps, and serve as a depository for United States government publications.

Through participation in the Wyoming Libraries Database (WYLD), Colorado Alliance of Research Libraries ("Alliance"), the Bibliographical Center for Research in Denver, the National Network of Libraries of Medicine, on-line information retrieval systems, and the interlibrary loan network, access is provided to other library resources from throughout the nation and the world.

The College of Law maintains a separate Law Library.

Library Faculty:

SANDRA M. BARSTOW, B.A. Kalamazoo College 1973; M.L.S. Western Michigan University 1977; M.B.A. Rollins College 1983; Librarian, University Libraries 2004, 1994, 1988.

STEPHEN C. BOSS, B.M. Simpson College 1983; B.A. 1984; M.L.S. University of Denver 1985; M.A. 1986; Associate Librarian, University Libraries 2008, 2002.

KAIJSA CALKINS, B.A. University of Washington, Bothell 2001; M.L.S. University of Washington, Seattle 2004; Assistant Librarian, University Libraries 2006.

JANET E. DOMBROWSKI, B.S. University of Colorado, Boulder 1981; M.L.S. University of Maryland, College Park 1991; Assistant Librarian, University Libraries 2008.

MARY M. FARRELL, B.A. University of Missouri, Kansas City 1984; M.L.S. University of Arizona 1988; M.P.A. Arizona State University 1992; Dean of Libraries, University Libraries 2002.

JENNY GARCIA, B.A. Regis University, 1989; M.L.S. Emporia State University 1992; Assistant Librarian, University Libraries 2003.

GENA M. GEORGE, B.A. University of North Texas 1993; M.L.S. University of North Texas 1997; Assistant Librarian, University Libraries 2005.

CHERYL GOLDENSTEIN, B.A. Bethany College 1982; M.L.S. University of Texas at Austin 1997; Assistant Librarian, University Libraries 2002.

MARTHA J. HANSCOM, B.A. Kalamazoo College 1970; M.L.S. Western Michigan University 1972; Associate Librarian, University Libraries 1990, 1978.

MARY ANN HARLOW, B.S. University of Wyoming 1989; M.L.S. University of Arizona 1990; Associate Librarian, University Libraries 1997, 1991.
TAMSEN L. HERT, B.A. Colorado State University 1975; M.L.S. Emporia State University 1984; M.A. 1988; Associate Librarian, University Libraries 1991, 1986.

CHAD E. HUTCHINS, B.A. University of Colorado, Boulder 1999; M.A. 2001; M.L.I.S. University of Texas, Austin 2004; Assistant Librarian, University Libraries 2008.

JAMIE KEARLEY, B.A. University of Illinois 1972; M.S. 1976; M.L.I.S. Louisiana State University 1991; Associate Librarian, University Libraries 2004, 1995.

DAVID KRUGER, B.S. South Dakota State University 1991; B.S.Ed. Minot State University 1994; M.A. Kansas State University 1996; M.L.S. University of Missouri 1998; Associate Librarian, University Libraries 2004, 1998.

CASSANDRA KVENILD, B.A. University of Wyoming 1996; M.L.I.S. University of Washington, Seattle 2000; Assistant Librarian, University Libraries 2008.

JANIS H. LEATH, B.A. University of Wyoming 1977; M.L.S. University of Wisconsin-Madison 1979; Associate Librarian, University Libraries 1995, 1989.

JENNIFER MAYER, B.A. University of Wyoming 1991; M.L.I.S. University of Oklahoma 1996; Associate Librarian, University Libraries 2005, 1999.

DEBORAH McCARTHY, B.A. Lycoming College 1983; M.L.S. Texas Women's University 1989; M.B.A. New Mexico State University 2003; Assistant Librarian 2004.

TAMI MORSE McGILL, B.A. University of California, Davis 1981; M.A. University of California, San Diego 1987; M.L.S. San Jose State University 2001; Assistant Librarian, University Libraries 2006.

MICHAEL L. NELSON, B.A. Kalamazoo College 1973; M.Lib. University of Washington 1978; M.A. Montana State University 1980; Associate Librarian, University Libraries 1991, 1984.

LORI J. PHILLIPS, B.A. University of Wyoming 1989; M.L.S. University of Arizona 1991; Associate Librarian, University Libraries 1999, 1992.

LAWRENCE SCHMIDT, B.S. Montana State University 1987; M.S. 1995; M.L.S. Emporia State University 2002; Associate Librarian, University Libraries 2008, 2002.

ROBERT A. STALEY, B.A. Gettysburg College 1969; M.A. University of Manitoba 1974; M.L.S. University of Pittsburgh 1974; Associate Librarian, University Libraries 2008, 2002.

LORI J. TERRILL, B.A. University of Wyoming 1993; M.L.S. Emporia State University 1995; Associate Librarian, University Libraries 2006, 2000.

BRYAN P. TRONSTAD, B.S. Montana State University 2000; M.L.S. University of Alabama 2003; Assistant Librarian, University Libraries 2004.

WILLIAM O. VAN ARSDALE, III, B.A. Southwestern College-Kansas 1968; M.A. University of Denver 1973; Associate Professor, University Libraries 1987, 1981.

LAURN W. WILHELM, B.A. Utah State University 1970; M.Ed. 1971; Associate Librarian, University Libraries 1986, 1975.

SARA R. WILLIAMS, B.A. Nebraska Wesleyan University 1976; M.A. Boston College 1980; M.S.L.I.S. Simmons College 1981; Associate Librarian, University Libraries 2006.

SUSAN C. WYNNE, B.A. Clemson University 1995; M.L.I.S. University of South Carolina 2004; Assistant Librarian, University Libraries 2006.

Centennial Complex

Designed by internationally prominent architect Antoine Predock to represent a town at the foot of a mountain, this dramatic building contains the collections of the American Heritage Center and the UW Art Museum. It is located at 2111 Willett Drive, just north of the Arena Auditorium and War Memorial Stadium.

American Heritage Center

Mark Greene, Director
(307) 766-4114

The American Heritage Center is the university's repository of manuscripts, rare books library, and official archives. The Center places service to UW undergraduates, graduate students, and faculty, as its highest priority. But because the Center's collections are known worldwide, UW undergraduates using the Center's holdings are likely to be working alongside scholars from Japan or Nigeria or the producers of PBS's American Experience.

The Center's collections are of interest to far more than history majors. The Center's collections go beyond Wyoming's or the region's borders and support a wide range of research and teaching activities in the humanities, sciences, arts, business, and education. So far, students from courses in 16 departments—African-American Studies, American Indian Studies, American Studies, Anthropology, Art, Geography, History, the Lab School, English, Music, Nursing, Pharmacy, Secondary Education, Sociology, University Studies, Women's Studies—regularly do research in the American Heritage Center.

The Center is one of the largest and most-consulted primary source repositories in the U.S. Major areas of collecting include Wyoming and the American West, the mining and petroleum industries, Western politics, environment and natural resources, journalism, air and rail transportation, the history of books, and 20th century entertainment such as popular music, radio, television, and film.

Students and faculty are encouraged to visit and make use of the collections – no appointments are necessary. The American Heritage Center is open from 8 a.m. to 5 p.m. Tuesday through Friday, Mondays 10 a.m. to 9 p.m.

American Heritage Center Faculty:

SHANNON BOWEN, A.B. Randolph-Macon Woman's College 1996; M.A. University of Wyoming 2001; Associate Archivist 2008, 2001.

CAROL L. BOWERS, B.A. University of Florida 1971; M.A. University of Wyoming 1994; Associate Archivist 2008, 1997.

RICHARD G. EWIG, B.A. University of Wyoming 1979; M.A. 1980; Associate Archivist 2005, 2000, 1994.

MATTHEW FRANCIS, B.A. Blufton University 2002; M.A. Wright State University 2008; Assistant Archivist 2008.

SHAUN HAYES, B.A. Bowling Green State University 2006; M.L.I.S. University of Pittsburgh 2008; Assistant Archivist 2009.

LAURA UGLEAN JACKSON, B.A. Colorado State University 2004; M.L.S. Simmons College 2007; Assistant Archivist 2008.

GINNY KILANDER, B.A. Indiana University 1992; M.A. University of Wyoming 1998; Associate Archivist 2005, 1999.

ANNE MARIE LANE, B.A. University of Missouri 1973; M.A. University of Kansas 1980; M.L.S. University of Arizona 1992; Archivist/Curator of Rare Books 2006, 1995.

LESLIE C. WAGGENER, B.A. University of Texas, Austin 1995; M.L.I.S. 2000; Associate Archivist 2007, 2000.

D. CLAUDIA THOMPSON, B.A. Metropolitan State College, Denver 1977; M.A. University of Denver 1978; Associate Archivist 2006, 2001, 1995.

JOHN WAGGENER, B.A. University of Wyoming 1994; M.A. 2001; Associate Archivist 2007, 2000.

Art Museum

Susan Moldenhauer, Director & Chief Curator
(307) 766-6622

Located on the east side of campus in the award-winning Centennial Complex, the UW Art Museum was established to bring the world of art to Wyoming. With "imagine learning from the masters" as a guiding principle, a rotating schedule of exhibitions range from ancient artifacts to contemporary art to subjects about the American West. The Art Museum's permanent collection of 7,000 objects spans Modern and Contemporary Art, American and European Art, Photography, and art of the Americas, Asia and Africa.

Exhibitions are accompanied by a wide-range of public programs, including panel discussions, exhibition tours with curators, and lectures by artists and scholars. An active K-12 program enhances the museum experience through tours, hands-on studio activities, and after-school-classes.

Art Express, the museum's outreach programs include the *Ann Simpson Artmobile Program* and the *Touring Exhibition Service*. The Artmobile takes original art and a museum educator to Wyoming's communities for programs in schools, community centers, museums, and galleries. The *Touring Exhibition Service* circulates as many as eight exhibitions of original art to venues across the state and beyond.

The Museum Store supports the Art Museum's education mission by offering items related to exhibition subjects and collection themes in addition to fine gifts, specialty children's items, and a growing array of museum reproduction prints, cards, watches, and T-shirts.

The Art Museum is free to all and is open Monday through Saturday, 10 a.m.–5 p.m. Hours are extended to include Sunday 1–5p.m. June through August and Mondays until 9 p.m. in the months of February, March, April, September, October, and November. Additional information on the Art Museum and its programs may be found at www.uwyo.edu/artmuseum.

Anthropology Museum

The Anthropology Museum is located on the main floor of the Anthropology Building. Rotating displays are drawn from ethnographic materials, physical anthropology collections and extensive faunal and archaeological collections. The museum's theme, "The Human Odyssey," examines human biological and cultural change with emphasis on Native American cultures. Other exhibits relate to research and course offerings in the Department of Anthropology. They are designed with the interest of the general public in mind.

The Anthropology Museum is open 8 a.m. to 5 p.m. Monday through Friday during the academic year. During the summer, hours are from 7:30 a.m. to 4:30 p.m. Monday through Friday. The museum is currently under construction and is expected to open to the public in January 2009.

Division of Information Technology

Robert Aylward, Vice President for Information Technology
202 Ivinson Building, (307) 766-4860
Web site: www.uwyo.edu/InfoTech

Academic computing labs, central computer facilities, instructional technologies, selected software licensing, computer training, telephone, and data communication service are important parts of academic and administrative life at the University of Wyoming. The Division of Information Technology's goal is to manage UW's computing and communications facilities in a professional, service-oriented manner for the campus community.

Information Technology maintains academic and administrative software applications, a state-of-the-art Windows domain, UNIX systems, and a wide range of peripheral computer equipment. An extensive campus-wide data network provides connectivity to these computers and the Internet from the various computer labs across campus, most campus buildings, university housing, and from off-campus via dial-in modems. There are approximately 200 wireless Ethernet access points across campus. Current information, updates, access point location maps, and “How-To” directions for students, faculty and staff are available online at www.uwyo.edu/InfoTech/wireless. Use of these University computing and data facilities is governed by UW Regulation 3-690, Ethical Use of Computers and Data Communications Facilities.

The central computers operate 24 hours a day, with the exception of system maintenance time. System maintenance work is required periodically on the data network, computing systems and servers. Maintenance on Information Technology supported systems is scheduled between 12:01 a.m. and 12:00 noon on Sundays.

High-speed data ports installed in the University residence halls, fraternities, sororities, and the River Village apartments connect directly to the campus data network. Other university residences have dial-up access to the network and Internet through the modem pool. More information can be found at www.uwyo.edu/ResNet or call Residence Life’s ResNet Help Line at 766-2989 for further university residence related information.

Several computer labs are located throughout campus for students, faculty, and staff. Many labs are staffed by student lab assistants who are able to answer lab-related questions. The computer labs contain personal computers with a wide variety of software and computing equipment. The computer lab in Biological Sciences room 37 is open and staffed 24 hours during the normal academic year, except during system maintenance time. The standard computer lab node configuration is also available through remote connections for use with a high-speed Internet connection. The UWStudent Remote Lab System is a collection of lab nodes that are designed to be accessed from a remote network connection. The remote lab nodes are configured identical to the UWStudent lab nodes found on campus. Access to student H: drive storage, roaming profiles, and specialized software are all available through the remote lab nodes.

More information, including a link to the UW Student Remote Lab System, a complete listing of labs, lab schedules, and software policies, is available online at microlab.uwyo.edu. Scheduled hours for labs are also posted at the entrance of each lab. For questions and assistance, please e-mail asu-it@uwyo.edu or call the HelpDesk at 766-4357, option 1.

The Classroom Technology Support group (CTS) provides support and maintenance for Audio Visual, lecture capture in specific classrooms, and other technology used in classrooms across campus. They can be contacted by phone at 766-2872 or by e-mail at clrmtech@uwyo.edu. For immediate assistance in a classroom where a class is being taught, please call 766-4357 (6-HELP), option 1. Someone will arrive to provide assistance. Training for classroom technologies is available by appointment. Call 766-2872 for more information. Training for the Classroom Building is provided by ECTL and CTS at the beginning of each semester. Please go to www.uwyo.edu/classroombuilding for further details.

Information Technology provides a range of telephone services on campus. In addition to basic phone service, long distance, voice mail, caller ID and call waiting ID are also available. Contact Information Technology’s Telecom Help Desk in the Information Technology Center (ITC), room 160, or call 766-4357, option 2, for more information.

Also available are sales and maintenance support for PCs, laser printers, and other peripheral equipment as well as Apple Computer products. PC Sales Consultants are located in the ITC and may be contacted at 766-2875; Apple Sales Consultants are also located in the ITC and may be contacted at 766-2749. PC or Apple sales can be contacted via e-mail at itsales@uwyo.edu. Computer repair requests may be submitted by filling out the Web form at www.uwyo.edu/ITRepair or by contacting the Help Desk at 766-4357, option 1.

Information Technology provides Help Desk, telephone, remote desktop, online chat, walk-in and in-office support during normal business hours. Call the Client Support Services Help Desk at 766-4357, option 1 or visit the reception area, 104A, in the ITC. Help Desk phone and online chat support is available outside normal business hours. Help Desk hours are posted at www.uwyo.edu/InfoTech/support/helpdesk.htm. Client Support also maintains “How To” help documents which cover subjects such as University computer accounts, how to connect to the network and how to access available software in the computing facilities. A complete listing of available documentation is online at www.uwyo.edu/AskIT. Printed copies are available in the lobby of the Iverson Building.

Selected software licensing checkout, software purchase, and training class reservations may also be made at the reception desk in the ITC. To accommodate student personal productivity, students who are enrolled at UW are eligible to obtain a set of Microsoft products including Microsoft Office for Windows, Microsoft Office for Macintosh, and Windows Operating System upgrades at little or no cost. Free antivirus software is also available for student use. Visit the WyoWare student software Web site at www.uwyo.edu/software/students for more information or to download the software after enrolling for a class.

The Division of Information Technology’s main office is located in room 202 of the Iverson Building and is open during normal business hours. Those in need of assistance are encouraged to call the Client Support Help Desk at 766-4357, option 1 or the Division Office at 766-4860.

Geological Museum

(307) 766-2646, 2650

E-mail: uwgeoms@uwyo.edu

Web site: www.uwyo.edu/geomuseum

The Geological Museum, in the east wing of the S.H. Knight Geology Building, contains exhibits that interpret the story of ancient Wyoming. Highlight exhibits include: one of the world’s only six mounted fossil skeletons of the well-known dinosaur Apatosaurus (Brontosaurus); skeletal cast and displays of the world-renowned “Big Al” the Allosaurus; a 50-million-year-old garfish from Wyoming’s Green River Formation (one of the largest complete freshwater fossil fish on display in the world); a skull cast of Wyoming’s state dinosaur, Triceratops; a one-of-a-kind, life-size, copper-plated Tyrannosaurus rex statue; and a fluorescent mineral room, featuring specimens from Wyoming and the world.

The museum maintains important display collections (particularly vertebrate and invertebrate fossils) that are available for study by students, as well as scientists from other institutions. The museum provides unique opportunities for undergraduate students to pursue research and display projects in Wyoming paleontology.

William D. Ruckelshaus Institute of Environment and Natural Resources

Ingrid C. Burke, Director; (307)766-5080

In the summer of 2002, the University of Wyoming Board of Trustees named the Institute of Environment and Natural Resources after William D. Ruckelshaus. Mr. Ruckelshaus, who was the U.S. Environmental Protection Agency administrator under Presidents Nixon and Reagan, served as institute board chairman from the institute's inception in 1994 until 2000. His leadership has guided the development of the institute as a forum for meaningful discussions on environmental and natural resource issues of concern to the state, the region, and the nation.

The William D. Ruckelshaus Institute of Environment and Natural Resources represents a partnership among UW faculty and students, a prominent advisory board of leaders in the field of environment and natural resources, and the aspirations of a land-grant university. The Institute's mission is to advance effective decision-making on environmental and natural resource issues by promoting and assisting collaborative, informed approaches that sustain both the economy and the environment. The institute strives to empower citizens and communities with accurate and unbiased scientific, technical, and socioeconomic information that can assist in formulating effective, collaborative solutions to complex environmental and natural resource issues.

The Ruckelshaus Institute is joined with the Helga Otto Haub School of Environment and Natural Resources at the University of Wyoming, and together with the Wyoming Conservation Corps, the institute and school comprise the Environment and Natural Resources program at UW. The Ruckelshaus Institute and Haub School work in tandem, with the institute focusing on research and outreach, and the school offering courses and degrees for undergraduates, graduate students, and mid-career professionals.

Inquiries about institute programs should be directed to the William D. Ruckelshaus Institute of Environment and Natural Resources, University of Wyoming, Dept. 3971, 1000 E. University Ave., Laramie, WY 82071-2000. E-mail: ienr@uwyo.edu.

Wyoming Geographic Information Science Center

Jeff Hamerlinck, Director

Agriculture C, Room 337 (307) 766-2532

E-mail: info@wygisc.uwyo.edu

Web site: www.wygisc.uwyo.edu

The Wyoming Geographic Information Science Center (WyGISC) has a mission to advance the understanding and application of geographic information science through basic and applied research, education and training, information and technology transfer, and by promoting utilization of geospatial technologies for science, management, and decision making within the University and throughout the state and region. Examples of geospatial technologies include geographic information systems, geographic cartography and visualization, Global Positioning System-based mapping, and image processing of remotely-sensed Earth resource data derived from aircraft or satellites. Broad applications areas exist in both environmental and social sciences, as well as agriculture, engineering and business.

Established in 2001, WyGISC evolved from the former Spatial Data and Visualization Center (SDVC) which operated on campus between 1996 and 2001. The center operates under the Office of Academic Affairs and in close coordination with the Office of Research, providing assistance to all units on campus and to numerous private, local, state, and federal entities in Wyoming and the Rocky Mountain region. Services include research collaboration, technical expertise, geospatial technology short course training, and geospatial data dissemination.

WyGISC encourages undergraduate and graduate student participation in its research projects and has sponsored students from the McNair Scholars Program and other student research apprentice programs, as well as graduate students affiliated with participating departments and research centers. Part-time employment and internship opportunities are often available. Inquiries may be directed to the center using the contact information provided above.

Statistical Consulting Center

Ken Gerow, Director

337 Ross Hall, (307) 766-6600

Web site: www.uwyo.edu/stats/consultingcenter.asp

The Statistical Consulting Center, a unit of the Department of Statistics, exists to coordinate the statistical knowledge and skills available within the department with the subject-matter expertise of other scientists throughout the university, and to bring that combination to bear on applied research problems in diverse areas. The center can provide assistance in research design, sampling, data collection, and/or data analysis for the full range of research needs. The initial consultation is free. Thereafter, a variety of mechanisms are available to acknowledge the contributions of statistical consulting to a given research project, including co-authorship on a scholarly publication, membership on a thesis or dissertation committee, direct compensation to the consultant at private consulting rates, subcontracting with the center on a grant project, etc. On occasion, the center can also offer paid employment and internships to graduate students who have appropriate training and skills to assist other researchers. For further information about any of the services available through the Statistical Consulting Center, please contact the center via the contact information above.

Wyoming Survey & Analysis Center

Burke D. Grandjean, Executive Director

UW Office Annex, Second Floor

Dept. 3925; 1000 E. University Ave.

Laramie, Wyoming 82071

Phone: (307) 766-2189, Fax: (307)766-2759

Email: wysac@uwyo.edu

Web site: www.uwyo.edu/wysac

The Wyoming Statistical Analysis Center was established at the University of Wyoming by Executive Order 2000-5 on September 16, 2000. In June 2004, it merged with the Survey Research Center to create the Wyoming Survey & Analysis Center (WYSAC).

WYSAC's purpose is to provide information for decision-makers by collecting, managing and analyzing data. WYSAC acts as a nucleus to the University for applied research, policy analysis, needs assessment and evaluation studies, with special emphasis on topics related to education, criminal justice and substance abuse. WYSAC personnel provide assistance to the academic community, University administrative units and both the public and private sectors throughout Wyoming and the region. Interested parties can call upon the center's expertise in survey methods, evaluation research, and information technology to carry out their data collection and analysis on a contract basis.

Services include opinion polling, drawing and construction of samples, design of questionnaires, computer data recording, tabulation of data, policy analysis and grant research. A computer-assisted telephone interviewing system (CATI) is maintained in the center for use by trained student interviewers. The center has staff knowledgeable in current US postal regulations for mail surveys, along with hardware and software for scanning the returns. Surveys are also conducted by e-mail, on the Internet, through in-person interviewing and in focus groups. The center offers paid employment and internships to students assisting in such tasks.

For further information on WYSAC or if interested in a graduate assistantship with WYSAC, contact WYSAC via the contact information provided.

UW National Park Service Research Center

The research center operates a field station at the historic AMK Ranch in Grand Teton National Park. Located 65 km north of Jackson, Wyoming. The field station provides scientists abundant research opportunities in the diverse aquatic and terrestrial environments of Grand Teton and Yellowstone National Parks, as well as the National Forests and Wilderness areas that make up the entire Greater Yellowstone area. The station has housing for up to 60 researchers and provides terrestrial and aquatic laboratories, boats, field equipment, a darkroom, conference rooms, and a library, all on site. A small grants program provides funding for individual proposals up to \$5,000 on research conducted in the Greater Yellowstone Area. A Weekly seminar series with barbecue dinner is presented throughout the summer season.

Inquiries concerning the UW-NPS Research Center program should be addressed to: Director, University of Wyoming-National Park Service Research Center, Dept. 3166, 1000 E. University Ave., Laramie, WY 82071.

Red Buttes Environmental Biology Laboratory

Within a few miles of Laramie, the Department of Zoology and Physiology operates the Red Buttes Environmental Biology Laboratory, a 9,600-square-foot facility equipped to handle both aquatic and terrestrial vertebrates. An aquatic ecology and toxicology laboratory, uniquely designed to accommodate a wide range of test conditions of water flow, temperature and composition, is available within the facility. Animal holding and surgical rooms are specifically constructed to accommodate experimentation on small (e.g. mice, squirrels), medium (e.g. coyote, badger) and large (e.g. elk, bighorn sheep) mammals. Outdoor corrals and fish runs are also available on the 400-acre site.

Inquiries concerning the Red Buttes Environmental Biology Laboratory should be addressed to the Department Head, Department of Zoology and Physiology, Dept. 3166, 1000 E. University Ave., Laramie, WY 82071.

Rocky Mountain Herbarium

Located in the Aven Nelson Building, the Rocky Mountain Herbarium and the associated U.S. Forest Service National Herbarium contain more than 850,000 plant specimens. The primary functions of the herbarium are to (1) serve as a source of information on the flora of the Rocky Mountain region in general and of Wyoming in particular; (2) aid in the identification of plants submitted by ranchers, farmers, county agents, and state and federal agencies throughout the region; and (3) serve as a source of research and teaching material in systematic and ecological botany. Thousands of specimens are loaned each year to recognized institutions throughout the United States where research requires a knowledge of western plants.

Open to university students and other qualified researchers, the herbarium invites queries regarding the identification of plants. Those persons wishing assistance in the identification of a plant should send two specimens to the herbarium. Inquiries should be addressed to The Curator, Rocky Mountain Herbarium, Department of Botany, Dept. 3165, 1000 E. University Ave., Laramie, WY 82071.

Western Interstate Commission for Higher Education (WICHE)

The Western Interstate Commission for Higher Education (WICHE) was created in 1953 by the governors and legislators of the western states. The primary commitment is to provide access to educational programs through interstate cooperation. Wyoming provides opportunities for qualified residents in the following programs:

Professional Student Exchange Program (PSEP) offers certified Wyoming residents access to professional education in the fields of dentistry, medicine, occupational therapy, optometry, osteopathic medicine, physical therapy, physician's assistant, podiatry, and veterinary medicine. To be eligible for certification, the applicant must be a legal resident of the State of Wyoming for three continuous years immediately prior to enrolling in professional school classes. Applications for certification are located at www.uwyo.edu/hs/upao/WICHEWAMI.asp and are due no later than October 15 of the year preceding the anticipated start date of professional school. Applicants who are accepted to a professional program and who receive state support pay reduced tuition. State support is dependent on continued appropriations from the Wyoming State Legislature.

Western Regional Graduate Program (WRGP): provides opportunities for qualified Wyoming residents to attend distinctive graduate programs in participating WICHE states. Those accepted pay resident or significantly reduced tuition at the school they attend.

Western Undergraduate Exchange (WUE): allows residents of participating states (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington and Wyoming) to attend a participating institution at reduced cost of 150% of the institution's resident tuition. Not all institutions in the participating states offer WUE opportunities.

The University of Wyoming invites competitive applicants from participating states and awards WUE to highly qualified students as part of the Peak Achievement Scholarship. Information can be obtained from the UW Admissions Office.

Information about WICHE programs may be obtained from the WICHE Certifying Office, Dept. 3432, 1000 E. University Ave., Laramie, WY 82071, (307)766-6704 or (307)766-3499 or WICHE Student Exchange Program, Box 9752, Boulder, CO 80301-9752, (303) 541-0214.

Wilhelm G. Solheim Mycological Herbarium

The Wilhelm G. Solheim Mycological Herbarium, housed on the third floor of the Aven Nelson Building, facilitates the study of symbiotic and biotrophic fungi. The herbarium contains approximately 50,000 specimens of fungi from around the world and the largest collection of fungi in the Rocky Mountain Region. These collections are available for study by qualified students and researchers. A mycological reference library is located with the collection. Specimens may be borrowed by institutions without charge for a one-year period. Inquiries should be addressed to The Curator, Solheim Mycological Herbarium, Department of Botany, Dept. 3165, 1000 E. University Ave., Laramie, WY 82071.

Wyoming Cooperative Research Unit

The Wyoming Cooperative Fish and Wildlife Research Unit is supported by the University of Wyoming, the Wyoming Game and Fish Department, the U.S. Department of Interior and the Wildlife Management Institute. The three permanent unit staff members serve as full faculty in the Department of Zoology and Physiology.

Research is conducted on many types of fish and wildlife issues. The emphasis is on evaluating proposed or actual habitat modifications in the northern Rocky Mountain area on fish and wildlife species and/or communities of organisms. Much of the Wyoming Game and Fish Department's field research is conducted through the unit. Both students hired as technicians as well as graduate assistants are involved in unit research.

For further information contact Leader, Wyoming Cooperative Research Unit, Dept. 3166, 1000 E. University Ave., Laramie, WY 82071.

Study Abroad/Exchange

(307) 766-3677

E-mail: studyabd@uwyo.edu

Web site: www.uwyo.edu/intprograms

Study abroad and student international exchange opportunities are available through the International Programs Office, located on the first floor of the Cheney International Center. UW students with a minimum 2.75 GPA are eligible to apply to participate in a wide variety of for-credit programs of study outside the U.S. Some work and internship options may be available. The international coordinator works with students individually to tailor the program of study to their specific needs. Considerations are made for cost, financial aid, transfer of credit, safety and health, time-to-graduation, country or region desired, and foreign language needed.

In addition to perfecting foreign language skills (in non-English-speaking countries) and learning about another culture in depth, international education makes for a life-changing experience. It alters perspectives by developing flexibility and critical thinking. International education also engenders a sense of what it is to be an American, what it is to be a citizen of the world, and who we are individually. Study abroad and exchange can help clarify life and professional goals, and often develops greater direction, focus, and motivation for the remaining years of university life, and beyond.

Through a combination of foreign partner universities, study abroad consortia, and cooperating U.S. universities, UW provides study abroad opportunities at hundreds of locations across the globe. Exchange opportunities also exist – they represent programs where students at partner institutions pay their home university tuition and fees, then simply exchange places. As another path to an international experience, self-designed programs of study with non-partner entities can be arranged as well.

Commonly Held Misconceptions about Study Abroad

Myth 1: I can't afford to study abroad.

Fact: There are many programs available that cost the same or nearly the same as attending UW.

Myth 2: I can't use my financial aid to study abroad.

Fact: Other than WICHE funding, financial aid can be used for study abroad. There are also scholarships available to offset additional costs of study.

Myth 3: I can't participate in study abroad for one or two semesters.

Fact: There are many short courses offered at UW for summer study abroad (3-6 weeks) led by UW faculty.

Myth 4: Because I speak English only, I am limited to English-speaking countries for study abroad.

Fact: There are a great many programs abroad for English speakers in non-English speaking countries. In order to attract U.S. students, many foreign universities offer courses in English.

Myth 5: I can't graduate on time if I study abroad.

Fact: Study Abroad advisers work with you and your academic adviser to select a place of study that offers the courses you require to complete your degree on time.

Myth 6: My adviser doesn't recommend study abroad.

Advice: Speak with your department chair and/or dean about this. Your adviser may subscribe to the study abroad myths outlined here. Don't be swayed by them.

Myth 7: There is nowhere abroad I can complete courses in my major.

Fact: UW offers hundreds of study abroad sites overseas. There are programs for every major.

Myth 8: It is dangerous to live abroad.

Fact: Study overseas is no more or less dangerous than it is in the U.S. While you should avoid countries experiencing social unrest, repression, outbreaks of violence, or epidemics, host universities and their communities are safe. Just exercise the same precautions you do at home, when visiting a U.S. city, and when walking at night.

Myth 9: The U.S., its institutions, and economy don't need me to study abroad.

Fact: Only 3% of U.S. undergraduates study abroad during college. The U.S. is desperate for its citizens to become internationally competent and/or skilled in another language. Current federal legislation is attempting to attract more U.S. students toward international education within their majors so that the nation can secure itself and its economic future in the 21st century.

For further information, contact International Programs at the phone number or e-mail above, or by writing to Study Abroad and Exchange, Department 3707, 1000 E. University Ave., Laramie, WY 82071.

Wyoming State Veterinary Laboratory

1174 Snowy Range Road, (307) 742-6638

E-mail: montgome@uwyo.edu

Web site: wyovet.uwyo.edu

Located west of campus and operated by the Department of Veterinary Sciences, the Wyoming State Veterinary Laboratory (WSVL) is responsible for diagnosis and reporting of animal diseases. Areas of expertise include morphological and clinical pathology, bacteriology, virology, toxicology, parasitology, electron microscopy, molecular diagnostics, and serology.

Cooperative diagnostic and research activities are conducted with various state and federal agencies. The WSVL building also houses a UW classroom, laboratories for the Wyoming Game and Fish Department, and Wyoming Department of Agriculture Analytical Services Laboratory. Students are encouraged to conduct domestic and wildlife disease research in an interdisciplinary setting.

For further information contact WSVL, 1174 Snowy Range Road, Laramie, WY 82070.

Commonly Used Terms

Academic load: The total semester hours of credit for all courses taken during a specified time—semester or summer session.

Academic probation: Probation is the status of a student who is not progressing satisfactorily toward his or her degree. A student shall be placed on probation at the end of the semester or term when his or her cumulative grade point average (GPA) falls below a 2.0.

Academic reinstatement: Restoration of a student's eligibility to register for courses after being on academic suspension. This process requires a petition that is first reviewed by the dean of the student's college or the Center for Advising and Career Services. Academic reinstatement does not guarantee restoration of financial aid eligibility which is a separate process handled by the financial aid office.

Academic suspension: The status of a person whose enrollment at UW has been terminated because of unsatisfactory academic progress towards either an undergraduate or graduate degree.

Accredited: A term applied to a school or specific program which has been recognized by a national or regional organization as meeting certain academic standards for quality and educational environment. The University of Wyoming, and all UW academic programs are accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools Commission on Institutions of Higher Education. This is the highest level of accreditation in the United States. Some academic programs have professional standards established by their respective accrediting associations.

Add and drop deadlines: The latest date in an academic term when a course may be added or dropped from a student's class schedule *without* approval of someone other than the student. Adding and dropping of courses is done through WyoWeb.

Admission: The process of being admitted to the university with the opportunity to take classes.

AP exam: An Advanced Placement Examination from the College Entrance Examination Board (CEEB) in a specific subject area available nationally to high school students. Obtain information on taking the examination from a high school guidance counselor. Information on university course credit for these examinations is available from the Office of the Registrar.

Audit: Individuals who want to take a course but who do not want either a grade or credit for taking it may register as an audit. The instructor for the course determines the amount of work and/or participation that is required. Marks of either Audit/Satisfactory or Audit/Unsatisfactory are assigned. Audit hours are charged tuition at the normal rate. Audit hours are not used to determine full- or part-time status.

Banner: Banner is a suite of products that are used as our student information system.

CAPP: CAPP is an electronic degree progress/advising support system that matches a student's completed and current UW course work (and any transfer work a student might have) with the current degree requirements to determine the student's progress toward earning a degree.

Class schedule: A publication containing a listing of all courses scheduled to be offered during a specific semester or summer session. In addition to the printed class schedule, the schedule is available on the web and is updated daily with any changes.

CLEP test: Subject area examination administered by the College Entrance Examination Board.

Concentration: A collection of courses within a major which focuses on a particular subject area.

Continuing probation: A student is placed on academic probation at the end of the semester or term when his or her cumulative grade point average (GPA) falls below a 2.0. A student is considered on continuing probation in subsequent semesters if the student earns a term GPA of 2.0 or above but whose cumulative GPA is still below a 2.0.

Corequisite: A course to be taken or a requirement to be fulfilled at the same time as a particular course is being taken.

Cross-listed course: A course which is identical in content, title, credit hours, and requirements which is offered by one or more academic departments. The four-digit course number must be the same. This designation must be approved by the University Course Review Committee.

Curriculum: The set of courses in a particular degree program. More generally, the courses (in total) offered in a college or university.

Degree requirements: Degree requirements include all requirements of the university (including University Studies Program), college, academic department, and major. All requirements must be successfully met in order to obtain a specific degree.

Drop: To discontinue enrollment in a course or courses prior to the end of the drop/add period at the beginning of a term. A dropped course does not appear on the student's academic transcript. Dropping from a class does not influence a student's Satisfactory Academic Progress measurement, but may impact the amount of financial aid a student earns for the semester in question.

Dual-listed course: A course which is offered at both the 4000- and 5000-level that is identical in course prefix, content, title, and credit hours. The last three digits of the four-digit course number must be the same. The 5000-level course must require additional work beyond that required for the 4000-level course. This designation must be approved by the University Course Review Committee.

Financial aid reinstatement: Restoration of one's financial aid eligibility based on being granted an exception to financial aid or scholarship rules. Financial aid restoration is a separate process from and is not guaranteed by academic reinstatement.

Full-time: A student taking 12 or more credit hours at the undergraduate level or 9 or more credit hours at the graduate level is considered a full-time student. During the summer session, undergraduate students enrolled in 6 or more credit hours and graduate students enrolled in 4.5 or more credit hours are considered full-time.

General Bulletin: The *General Bulletin*, or catalog, is the official document of the university which includes information on all undergraduate academic programs and their requirements, courses offered by each academic department, lists of faculty, policies and procedures related to admission, financial aid, all registration activity, and tuition and fees. A student's degree requirements are based on the *General Bulletin* in effect the year he or she enters either UW or another bulletin year as approved with a petition.

Grade point average: The semester grade point average (GPA) is the sum of all grade points earned in a semester or term divided by all credit hours attempted for letter grade. Credit hours in courses in which marks of I, W, S, or U were assigned are excluded. The cumulative grade point average is the average of all grades earned at UW.

Lower-division course: Courses normally taken during the freshman and sophomore years. Lower division courses are those numbered between 1000 and 2999.

Major: The primary disciplinary interest or academic subject area of a student as represented by one of the curricula offered by the various academic departments. The undergraduate degree may or may not carry the same title as the major. Every student has one or more majors but may or may not have a minor or concentration.

Minor: A secondary subject area interest (to the major) represented by a specified set of hours and/or courses. Differs from a concentration in that a minor is not a subdivision of the major subject area.

Option: A concentration of elective courses within a major which emphasizes one aspect of the major, chosen by a student according to his or her interests.

Orientation: A program of one to three days on campus designed to acquaint a new student with the facilities, policies, sources of information and assistance, and academic and social environment. Academic advising and registration are also included.

Prerequisite: A requirement to be completed before enrollment in a course or a degree program. Prerequisites for individual courses are listed in their course description in this bulletin. The statement, “or consent of instructor” is implied for all prerequisites. Students are responsible for being aware of a course’s prerequisites prior to enrolling in the course.

Registration: The process of officially enrolling into one or more courses or matriculation at the university.

Satisfactory academic progress: Satisfactory Academic Progress only applies to federal financial aid applicants and recipients. Three measures of a student’s advancement toward the earning of his or her stated degree objective are 1) a grade point average putting the student in good academic standing, 2) a ratio of credit hours earned compared to credit hours attempted in the student’s most recent academic year, and 3) a comparison of the number of credit hours attempted in a college career compared to the number of hours required to earn the pursued degree.

Semester: The division of the calendar year used in academic scheduling. A semester is roughly 15 weeks in length.

Semester credit hour: The unit of academic credit for course work.

Transfer credit evaluations: An evaluation of previous college-level course work from another regionally-accredited academic institution, international post-secondary institution, standardized test, or military course work to determine whether courses are transferable to UW as well as to determine any UW equivalents.

Upper-division course: Courses normally taken during the junior and senior years. These courses are numbered from 3000 – 4999.

“W” Number: A student’s unique identifier in the Banner/WyoWeb system will begin with “W”. This “W” number replaces the Social Security Number as a student’s unique identifier.

Withdrawal: To discontinue enrollment in a course or courses after the end of the drop/add period. When withdrawing from one or more, but not all, courses, a student should obtain and process an Individual Class Withdrawal form. To withdraw from all courses in a semester, a student should begin the process in the Dean of Students Office. A mark of W will be placed on the student’s academic transcript for each course. Withdrawal from a course or from the university may impact both a student’s current and future receipt of financial aid. Ask a financial aid office professional before withdrawal.

WyoWeb: The University of Wyoming portal used for communication with the campus community, registration activity, grade posting, financial aid, course management, and advising. A specialized version of WyoWeb is available for all enrolled students, faculty, staff, and alumni.

Courses of Instruction

Changes in Bulletin Information

The course offerings and requirements of the University of Wyoming are under examination and revision continually. This bulletin is not a contract; it merely presents the offerings and requirements in effect at the time of publication and in no way guarantees that the offerings and requirements will not change.

Not all courses are offered each term. The listing of courses does not imply a contractual obligation to offer the same during the year of publication of this bulletin. The university reserves the right to offer, limit, or cancel course offerings for academic, funding, or facility considerations, and to cancel any offered course for which there is not sufficient enrollment.

The university reserves the right to change approved course listings at any time during a student's term of residence.

Graduate-level courses are described in the *Graduate Bulletin*.

Preparatory Courses Taught at UW by Laramie County Community College

The University of Wyoming has contracted for Laramie County Community College to offer preparatory courses on the university campus. University students will register through the normal university registration process. Inclusion of these courses in a student's schedule will count as part of the credit load for determining full-time status; however, UW credit is not awarded. For further information, contact the LCCC coordinator, Ross Hall, rooms 26 and 27, (307) 766-2514.

Course Credits

The amount of credit offered for any course work published in this bulletin is based on and governed by prior university faculty recommendation and institutional determinations.

A credit hour denotes a unit of academic work. Normally, one credit hour is earned in a course meeting one hour per week for a semester (15-16 weeks). Each credit hour unit requires an average of three hours of student effort per week. In variable credit courses, the efforts required of the students are proportional to the credit hours attempted.

Even if topics differ in separate sections, variable credits limit the credits which can be earned in that course in one semester and career maximum limit the credits from that course considered toward any one degree.

Format of Course Listings

On the following pages, courses approved for offering are listed by college, program subject, and course level (number).

The heading which precedes the brief description of each course shows the current course identification number; former course number(s), if any, in brackets; course title; a designation in bold brackets (**[W1↔WA]**, e.g. **[USP 1991↔USP 2003]**), if any, concerning applicability of the course to the University Studies Program (see below for designation); an indicator, if any, concerning applicability of the course in postgraduate-careers; the number of semester credit hours established for the course (fixed or variable with the semester); and the career maximum of credit for successive term enrollments in the identified course, if different from the established semester credit-hours limit. For example, "1-3 (Max.9)" means that a student may earn between 1 and 3 hours of credit for that course within one semester and a maximum of 9 hours within a degree career. The course description indicates any prerequisites for that course and if it is offered for satisfactory/unsatisfactory grading only.

Course Levels

University courses are distinguished by number indicating five levels of instruction as follows:

0000-0999	Preparatory courses (no credit)
1000-2999	Primarily for Freshmen and Sophomores
3000-4999	Primarily for Juniors and Seniors
5000-5999	Primarily for Graduate Students
6000-6999	Law courses, WWAMI courses, and Doctor of Pharmacy courses

A bracketed course number [] indicates a previous number of the same course. Double credit cannot be earned by repeating a course.

Prerequisites are the primary factor which normally govern whether a student enrolls for any particular course. However, individual departments and/or colleges may place additional restrictions on course enrollments (e.g. enrollment may be restricted by student classification).

Enrollment in engineering courses is generally limited to engineering students.

Law courses are normally open only to students approved for the program.

Graduate students may enroll in courses numbered 1000-3999 to cure undergraduate deficiencies but only courses numbered 4000 and above will be computed into the graduate GPA and allowed for graduate credit.

University Studies Program Designations

C	=	Integrated Cultural Context
CA	=	Cultural Context - Arts
CH	=	Cultural Context - Humanities
CS	=	Cultural Context - Social Sciences
D	=	Diversity in the United States
G	=	Global Awareness
I	=	Intellectual Community
L	=	Information Literacy
O	=	Oral Communication
P	=	Physical Activity and Health
QA	=	Quantitative Reasoning I
QB	=	Quantitative Reasoning II
S	=	Integrated Science
SB	=	Biological Science
SE	=	Earth Science
SP	=	Physical Science
V	=	U.S. and Wyoming Constitutions
WA	=	Writing I
WB	=	Writing II
WC	=	Writing III

Course Prefixes and Description Index

Prefix	Department	Page	Prefix	Department	Page
AS	Arts and sciences	109	ES	Engineering science	246
AAST	African American studies	111	ESE	Energy systems engineering	274
ACCT	Accounting	216	ESS	Earth system science	314
ADED	Adult education	232	FCSC	Family and consumer science	82
AECL	Agroecology	92	FDSC	Food science	78
AGEC	Agricultural economics	73	FIN	Finance	221
AGRI	Agriculture	71	FREN	French	165
AIR	Air Force ROTC	311	GEOG	Geography	147
AIST	American indian studies	112	GEOL	Geology	151
AMST	American studies	115	GERM	German	165
ANSC	Animal science	77	GRK	Greek	166
ANTH	Anthropology	117	HIST	History	155
ARE	Architectural engineering	257	HLED	Health education	284
ARMY	Army ROTC	308	HLSC	Health sciences	274
ART	Art	121	HM	Human medicine	286
ASTR	Astronomy	124	HP	Honors program	323
ATSC	Atmospheric science	247	IMGT	Information management	217
BE	Bioengineering	267	INST	International studies	161
BOT	Botany	126	ITEC	Instructional technology	232
BUSN	Business	215	JAPN	Japanese	166
CE	Civil engineering	254	KIN	Kinesiology	281
CHE	Chemical engineering	250	LANG	Languages	167
CHEM	Chemistry	129	LATN	Latin	167
CHIN	Chinese	164	LBRY	Information Literacy	318
CHST	Chicano studies	131	LIBS	Library sciences	233
CLAS	Classics	164	LIFE	Life Science (previously BIOL)	169
COJO	Communication and journalism	133	MATH	Mathematics	172
CNSL	Counseling	233	ME	Mechanical engineering	269
COSC	Computer science	261	MGT	Management	223
CRMJ	Criminal justice	138	MICR	Microbiology	87
DHYG	Dental hygiene	275	MKT	Marketing	225
DSCI	Decision science	223	MOLB	Molecular biology	89
ECON	Economics	219	MUSC	Music	177
EDAD	Educational administration	238	NASC	Natural science	244
EDAG	Agricultural education	241	NURS	Nursing	292
EDCI	Curriculum and instruction	237	PATB	Pathobiology	101
EDEC	Early childhood education	237	PEAC	Physical education - activity	280
EDEL	Elementary education	236	PEAT	Varsity Athletics	280
EDEX	Exceptional children	243	PETE	Petroleum engineering	251
EDIE	Industrial education	242	PHCY	Pharmacy	299
EDSE	Secondary education	239	PHIL	Philosophy	181
EDST	Educational studies	234	PHYS	Physics	183
EE	Electrical engineering	265	PLNT	Plant sciences	93
ENGL	English	142	POLS	Political science	186
ENR	Environment and natural resources	316	PSYC	Psychology	190
ENTO	Entomology	96	RELI	Religious studies	193

Prefix	Department	Page	Prefix	Department	Page
REWM	Rangeland ecology and watershed management	98	SPPA	Speech pathology and audiology	277
RNEW	Renewable resources	95	STAT	Statistics	198
RUSS	Russian	168	THEA	Theatre and dance	203
SOC	Sociology	195	UWYO	University of Wyoming FIG and Synergy	324
SOIL	Soil sciences	100	WIND	Wyoming INstitute for Disabilities	304
SOWK	Social work	303	WMST	Women's studies	207
SPAN	Spanish	168	ZOO	Zoology and physiology	211

College of Agriculture

151 Agriculture Building

Frank Galey, Dean

Phone: (307)766-4133 Fax: (307)766-4030

Web site: www.uwyo.edu/uwag

The College of Agriculture offers a wide variety of course work in agriculture, molecular biology and family and consumer sciences. The curriculum provides a sound background in basic sciences and the choice of a number of fields in which to specialize. Students are trained in principles which apply throughout the world, with special emphasis on types of agriculture found in the Rocky Mountain region.

Laboratory work is stressed in all programs because of its importance in agricultural professions. Students receive excellent training from case studies and practical experience provided at research and extension centers. Other facilities include modern laboratories and classrooms, an abattoir, meat processing rooms, farm shop, greenhouses, and wool laboratory.

In addition to the academic departments, the college includes the Agricultural Experiment Station and the Cooperative Extension Service. Materials and techniques resulting from this effective triple combination benefit both students and staff in the never-ending search for problem-solving information. The close relationship between teachers, researchers, and extension workers creates a learning atmosphere that encourages the development of the finest students.

Programs of Study Undergraduate Degrees

Bachelor of Science

- Agricultural business
- Agricultural communications
- Agroecology
- Animal and veterinary sciences
- Microbiology
- Molecular Biology
- Rangeland ecology and watershed management

Bachelor of Science in Family and Consumer Sciences

Bachelor of Applied Science

Graduate Degrees

Master of Science

- Agricultural economics
- Agricultural economics/water resources
- Agronomy
- Animal and veterinary sciences
- Early childhood development
- Entomology
- Entomology/water resources
- Family and consumer sciences
- Food science and human nutrition
- Molecular biology
- Rangeland ecology and watershed management
- Rangeland ecology and watershed management/water resources

- Reproductive biology
- Soil science/water resources

Doctor of Philosophy

- Agronomy
- Animal and veterinary sciences
- Entomology
- Molecular and cellular life sciences
- Molecular biology
- Rangeland ecology and watershed management
- Reproductive biology
- Soil science

The following certificates and/or degrees in the College of Agriculture are available through the UW Outreach School:

- Certificate: Early Childhood Program Director
- Online bachelor's degrees: Family and Consumer Sciences (Professional Child Development or Family and Community Services Options)

For more information, contact the UW Outreach School at (800) 448-7801 or go to the web at outreach.uwyo.edu.

The College of Agriculture also offers a graduate certificate in reclamation and restoration ecology. For more information, contact the UW Graduate School.

Agriculture College Basic Education Core

All undergraduates in College of Agriculture curriculums are required to follow the basic education core as noted below. This core meets the University Studies Program requirements and all-university requirements for state and national constitution and physical education.

Core Components	Hrs.
Intellectual Community (I)	1-3
Writing 1 (WA)	3
Oral Communication (O)	3
Quantitative Reasoning 1 (QA)*	3
Quantitative Reasoning 2 (QB).....	3
Science (S, SB, SP, SE).....	4-8
Cultural Context (C, CH, CS, CA)	9
U.S. and Wyoming Constitutions (V).....	3
Physical Activity and Health (P)	1
Subtotal (min. core requirements)	30-36
Hours for major, support areas and electives as determined by division	79-91

Total Hours 120-126

*Core Components are mutually exclusive of each other; hence, two core components may not be fulfilled by the same course. Except for the QA, core courses may have topics from the embeddable components list included in their curriculum, where appropriate.

Courses taken for S/U

A maximum of 20 elective hours with a grade of S (satisfactory) may be included as part of the total credit requirements for graduation; but no S/U hours may be used to satisfy university, major requirements or required electives, unless the course is offered for S/U grading only.

Minors in Agriculture

Minors provide a formalized recognition of concentrated study in a specific subject area. A minor degree offers recognition for academic achievement outside of the students' major course curriculum and gives students a concentration of work in the chosen minor area.

A minors program can enable students to enhance and expand career opportunities. A minor will also improve the possibility of admission to graduate programs in any chosen major, minor, or related field of study.

Minors Available in the College of Agriculture Include:

- Agricultural business
- Agricultural entomology
- Agroecology
- Animal and veterinary sciences
- Apparel design
- Child and family studies
- Farm and ranch management
- Food and nutrition
- Forest resources
- General agricultural economics
- Horticulture
- Insect biology
- Interior design
- International agriculture
- Molecular biology
- Natural resource economics
- Plant protection
- Rangeland ecology and watershed management
- Reclamation and restoration ecology
- Soil science

Agricultural Communications Major

A wide variety of courses in agriculture, broadcasting and journalism provides students with basic preparation for positions as broadcasters, editors or writers for farm and home organizations, state and federal agencies, magazines, newspapers, radio and television stations, and commercial businesses. Communication skills are also distinct assets in agricultural sales, research, service and teaching.

Students enrolled in agricultural courses acquire up-to-date and knowledgeable backgrounds of the subject matter. Courses in broadcasting and journalism develop proficiencies demanded by employers of communication professionals.

Minimum Requirements for Agricultural Communications Majors (B.S.)

	<i>Hrs.</i>
University Studies Program requirements	30-36
Communications/journalism core	24
COJO 1000, 1010, 1040, 2100 and minimum of 12 hours of communication/journalism elective	
Agriculture core requirements	42
At least 18 hours must be lower division (Ag 1000-2000) elective courses, and at least 24 hours must be upper division (Ag 3000-4000) elective courses.	
Supporting course requirement	4
STAT 2050 or 2070	
Additional hours for major and electives	18-24
Total Hrs:	120

Students wishing to pursue an area of emphasis in the agricultural communications option are encouraged to also select a minor. The college currently offers 22 minors, and any of these can help to better prepare students for employment or graduate work. (see above)

Agricultural communication majors also may complete an internship in their field. A variety of opportunities are available and students can work with the Associate Dean to determine an appropriate internship for their area of emphasis.

Agriculture Education with Concurrent Major in Agricultural Communications

This program consists of a minimum of 127 total hours. Minimum 2.75 cumulative GPA and minimum 2.5 content GPA required. This major will be advised in the College of Education, with a secondary adviser in the College of Agriculture. Refer to the College of Education for specific curriculum requirements.

Agriculture (AGRI)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1001. Intellectual Community and Information Literacy in Agriculture. 2. [(none)♦I, L] For students interested in Environmental, Human and Life Sciences, Agriculture and Natural Resources, or for anyone with interests in Ecology and Behavior. Comprised of a series of guest presentations, supplemented by class discussions, case studies, field trips, and demonstrations, reflective writings, and small group, active cooperative learning activities. *Prerequisites:* none.

1010 [1000]. Computers in Agriculture. 2. Familiarizes students with computer applications in agriculture. User-friendly course which provides students opportunity to use personal computers in various agriculture applications. Previous computer experience not necessary.

3000. Discovering and Utilizing Ideas and Information. 3. [(none)♦I, L] Learning in this area guides students to accessing, evaluating, and utilizing information and ideas; communicating information and ideas effectively and responsibly; civic engagement for individual, organizational and community problem-solving, and applying new skills, knowledge, and perspectives in a contemporary society. *Prerequisites:* WA and junior status.

4520. Field Practicum: Extension Work. 1-4 (Max. 8). Provides practical experiences to those wanting to pursue a career with Cooperative Extension Service. Interns are matched with county-based personnel for hands-on learning experiences across the state. Develop working knowledge of CES's mission to provide the citizens of Wyoming with education and applied research. Dual listed with AGRI 5520. *Prerequisite:* must pass volunteer screening process.

4546. Agriculture: Rooted in Diversity. 3. [(none)♦C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with ENGL/AAST/AIST/CHST/FCSC/AMST/HIST 4546. *Prerequisites:* Junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4990. Topics. 1-3 (Max. 8). Accommodates topics whose subject matter is not included in other College of Agriculture offerings. Please see the class schedule for current topic.

Department of Agriculture and Applied Economics

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Department Head: Roger Coupal

Professors:

NICOLE S. BALLENGER, B.A. University of California, Santa Cruz 1975; M.S. University of California, Davis 1980; Ph.D. 1984; Professor of Agricultural Economics 2004.

LARRY J. HELD, B.S. North Dakota State University 1971; M.S. 1973; Ph.D. University of Nebraska 1977; Professor of Agricultural Economics 1988, 1977.

DALE J. MENKHAUS, B.S. Purdue University 1967; M.S. Michigan State University 1970; Ph.D. Purdue University 1973; Professor of Agricultural Economics 1982, 1973.

DAVID T. TAYLOR, B.S. Montana State University 1972; M.S. 1973; Ph.D. Colorado State University 1987; Professor of Agricultural Economics 1994, 1985.

GLEN D. WHIPPLE, B.A. Brigham Young University 1974; M.S. Utah State University 1976; Ph.D. Washington State University 1980; Professor of Agricultural Economics 1990, 1985; Director, UW Extension.

Associate Professors:

EDWARD B. BRADLEY, B.S. University of Wisconsin 1971; Ph.D. Pennsylvania State University 1978; Associate Professor of Agricultural Economics 1987, 1977.

ROGER COUPAL, B.S. Utah State University 1978; M.S. University of Arizona 1985; Ph.D. Washington State University 1997; Associate Professor of Agricultural Economics 2003, 1997.

DON MCLEOD, B.S. St. John's College 1982; M.S. Oregon State University 1987; Ph.D. 1994; Associate Professor of Agricultural Economics 2003, 1995.

ALAN C. SCHROEDER, B.S. North Dakota State University 1971; M.S. University of Wisconsin 1974; J.D. 1974; Ph.D. 1982; Associate Professor of Agricultural Economics 1992, 1986.

Assistant Professors:

MATTHEW A. ANDERSEN, B.A. Colorado College 1991; M.S. Colorado School of Mines 2000; Ph.D. University of California, Davis 2005; Assistant Professor of Agricultural and Applied Economics 2007.

CHRISTOPHER T. BASTIAN, B.S. University of Wyoming 1987; M.S. 1990; Ph.D. Colorado State University 2004; Assistant Professor of Agricultural and Applied Economics 2005.

DANNELE E. PECK, B.S. University of Wyoming 2000; M.S. 2002; Ph.D. Oregon State University 2006; Assistant Professor of Agricultural Economics 2006.

BENJAMIN S. RASHFORD, B.S. University of Wyoming 1999; M.S. 2001; Ph.D. Oregon State University 2006; Assistant Professor of Agricultural Economics 2006.

MARIAH D. EHMKE, B.S. Kansas State University 1997; M.S. Ohio State University 2001; Ph.D. Purdue University 2005; Assistant Professor of Agricultural Economics 2005.

Academic Professionals:

COLE EHMKE, B.A. Bethany College 1997; M.S. University of Sydney, Australia 1999; Assistant University Extension Educator 2005.

THOMAS FOULKS, B.A. University of Montana 1985; M.S. University of Wyoming 1992; Associate Research Scientist 2005, 1998.

Tempoary Lecturers:

WILLIAM BILES, B.S. University of Nebraska, M.B.A. Wharton School, University of Pennsylvania.

CARL OLSON, B.S. University of Wisconsin; M.S. Montana State University; Ph.D. Oklahoma State University.

JIM THOMPSON, B.A. Occidental College; M.A., Ph.D. University of Illinois-Chicago.

Professor Emeritus:

James J. Jacobs

The Department of Agricultural and Applied Economics offers three options within the agricultural business bachelor of science degree program. They are agribusiness management, farm and ranch management, and international agriculture. All three options focus on the development of critical thinking, research, negotiation, and communication skills for students interested in

1. agricultural operations,
2. small rural businesses;
3. community economics,
4. financial institutions,
5. agricultural and natural resources development and;
6. other pursuits where applied economic tools will be useful.

A brief description of minimum course requirements for each of the three options in agricultural business is given below. In addition, faculty advisers will work with students to tailor a curriculum to individual interests and goals.

Agribusiness Management Option

This curriculum is for students preparing for careers in the agribusiness field. Applied agricultural economics courses are supplemented with marketing, management, finance and other courses from the College of Business and production-oriented courses from other departments in the College of Agriculture.

*Minimum Course Requirements for Agricultural Business (B.S.) Majors within the Agribusiness Management Option***

	Hrs.
AGEC 1000	2
Writing	9
ENGL 1010 (WA), WB-writing course, AGECE 4950 and 4960 (WC)	
Quantitative (required for major ¹)	6-7
MATH 1400; 2350	
Oral Communication	3
COJO 1010	
Biological Science	4
Physical Science	4
Social Science	3
AGEC 1010	
Humanities, Arts, Culture	6
US Constitution	3
Diversity	3
Global Awareness	3
AGEC 3860 or 4880	
Physical Education	1
Agricultural Economics	*21
1020, 3400, 4050, 4060, 4500; either 4070 or 4830 or 4840 or 4880; 3 hours of AGECE electives	
Supporting Agriculture	9
(other than Agricultural economics)	
Statistics	4
Computers	2-3
Supporting Economics	6
ECON 3010 and 3020	
Business	15
ACCT 1010 and 1020; and 9 hours of 3000-4000 level business courses	
Electives	15-16
Total Hours	121

¹All majors are required to take MATH 1400 and MATH 2350.

*At least 18 of these hours must be in upper-level (3000 or above) courses. A maximum of 3 hours of AGECE 4910 and 4930 may be used to satisfy the agricultural economics credit hour requirement.

**Majors are subject to university studies requirements and must have a minimum of 48 hours of upper-level (3000 and 4000) course work.

Farm and Ranch Management Option

This curriculum is for students intending to become farm and/or ranch operators or professional managers of farms, ranches or feedlots. It is also well suited for students interested in the field of agricultural finance.

In this option, courses in farm and ranch management, finance, and marketing are supplemented by courses in crops, range management, veterinary sciences and animal science, with electives in other areas.

*Minimum Course Requirements for Agricultural Business (B.S.) Majors within the Farm and Ranch Management Option***

	Hrs.
AGEC 1000	2
Writing	9
ENGL 1010 (WA), WB-writing course (AGECE 3400 cannot be used to meet this, AGECE 4950 and 4960 (WC)	
Quantitative (required for major ¹)	6-7
MATH 1400; 2350	
COJO 1010	3
Biological Sciences	8
Physical Science	4
CHEM 1000 or 1020 or 1050	
Social Science	3
AGEC 1010	
Humanities, Arts, Culture	6
US Constitution	3
Diversity	3
Global Awareness	3
AGEC 3860 or 4880	
Physical Education	1
Agricultural Economics	22*
1020, 2020, 3400, 4640, 9 hours AGECE electives	
Supporting Agriculture	12
SOIL 2010 (8 AG college hours other than Agricultural Economics)	
Statistics	4
Computers	2-3
Supporting Economics	6
ECON 3010 and 3020	
Business	3
ACCT 1010	
Electives	19-20
Total Hrs.	121

¹All majors are required to take MATH 1400 and MATH 2350.

*At least 18 of these hours must be in upper-level (3000 or above) courses. A maximum of 3 hours of AGECE 4910 and 4930 may be used to satisfy the agricultural economics credit hour requirement.

**Majors are subject to university studies requirements and must have a minimum of 48 hours of upper-level (3000 and 4000) course work.

International Agriculture Option

This curriculum is for students who desire training related to international agricultural business, and with agricultural and economic problems of developing nations. International trade and relations, world food production, agricultural and economic geography, economic development and comparative systems are emphasized in this program.

*Minimum Course Requirements for Agricultural Business (B.S.) Majors within the International Agriculture Option***

	<i>Hrs.</i>
AGEC 1000	2
Writing	9
ENGL 1010 (WA), WB-writing course, AGECE 4950 and 4960 (WC)	
Quantitative (required for major ¹)	6-7
MATH 1400; 2350	
Oral Communication	3
COJO 1010	
Biological Science	4
Physical Science	4
Social Science	3
SOC 1000 or POLS 1200	
Humanities, Arts, Culture	6
US Constitution	3
Diversity	3
Global Awareness	3
AGEC 3860	
Physical Education.....	1
Agricultural Economics.....	21*
1010, 1020, 4460, 4740, 4880, 6 hours of AGECE electives	
Supporting Agriculture.....	6
Other than agricultural economics	
Statistics	4
Computers	2-3
Supporting Business	12
BUSN/INST 2000, ECON 3010, 3020 and 4740	
Supporting International***	15
POLS 2310 or 3220 or 3230 or 3270 or ..4250 or 4330 or 3220; GEOG 1020 or 3050 or 4050; SOC/INST 4110 or 4300 or SOC 4600; AGECE 4930, BUSN 4540, MKT/ INST 4540 and other re-approved courses	
Foreign Language	12
1010, 1020, 2030	
Electives	1-2
Total Hrs.	121

¹All majors are required to take MATH 1400 and MATH 2350.

*At least 18 of these hours must be in upper-level (3000 or above) courses. A maximum of three hours of AGECE 4910 and 4930 may be used to satisfy the agricultural economics credit hour requirement.

**Majors are subject to university studies requirements and must have a minimum of 48 hours of upper-level (3000 and 4000) course work.

***One course in each of political science, sociology and geography and recreation is required plus a minimum of two additional courses. A maximum of 3 hours of AGECE 4930 can be applied to this requirement. Six hours of international social science, business and economics can be waived if the student minors in a foreign language.

Environment and Natural Resources

Students interested in natural resource or environmental issues or careers may complete any of the three options within agricultural business offered by the department with an environment and natural resource emphasis. Inquiries about environment and natural resource concentra-

tions in agricultural business should be directed to the Department of Agricultural and Applied Economics.

Minors Program

The department also offers five minor programs. These five minors are to give students majoring in other undergraduate curricula in the university a concentration of work in any of the four specialized undergraduate curricula offered by the department or in general agricultural economics. Each minor requires 27 hours in prescribed course work including 6 hours in supporting agriculture. Students need to plan their course work to meet course prerequisites.

Agricultural Business Minor. AGECE 1010, 1020, 4050 and 4060; Accounting 1010; 6 additional hours in upper-level agricultural economics courses; 6 hours in supporting agriculture courses.

Farm and Ranch Management Minor. AGECE 1010, 1020, 2020 and 4640; 9 additional hours in upper-level agricultural economics courses; 6 hours in supporting agriculture courses.

International Agriculture Minor. AGECE 1010, 1020, 4860 and 4880; 6 additional hours in upper-level agricultural economics courses; 3 or 4 hours in foreign culture or language; 6 hours in supporting agriculture courses.

Natural Resource Economics Minor. Required: AGECE 1020, 4700, 4720, and 4750; choose 9 additional hours from AGECE 4450, 4600, 4710; ECON 2400, 4400, 4410, 4520 (note: College of Business prerequisites); ENR 4500.

General Agricultural Economics Minor. AGECE 1010, 1020 and 15 additional hours in agricultural economics courses with 12 hours at the upper-level; 6 hours in supporting agriculture courses.

Graduate Study

The Department of Agricultural and Applied Economics offers graduate work leading to the master of science degree. Agricultural Business and Community Economic Development degree options are available, as well as the more traditional agricultural economics M.S. degree. Degree candidates may concentrate their work in one of the following areas: farm and ranch management, production economics, marketing and price analysis, agricultural policy, natural resource economics, agricultural finance, community development, or international agriculture. Degree candidates for the agricultural business degree may concentrate their work on management, marketing or finance. See the *Graduate Bulletin* for more details and information.

Agricultural Economics (AGECE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Agricultural and Applied Economics Orientation. 2. [F1↔I, L] Directs students through a series of short writing and research exercises designed to improve the academic skills of new or prospective agribusiness majors. Also explores cultural diversity, career opportunities and degree requirements for majors, and strategies for using campus resources. Offered S/U only. (Normally offered fall semester)

1010. Principles of Macroeconomics I. 3. [C2↔CS] A beginning study of how economic society is organized and uses scarce resources to provide for its material wants. National income analysis; business cycles; the banking system; monetary and fiscal policy. Inflation and unemployment. Cross listed with ECON 1010.

1020. Principles of Microeconomics. 3. [C2↔CS] A basic study of value and price theory, monopoly and public policy; markets for productive goods and services; alternative forms of economic organization; international trade. Cross listed with ECON 1020.

2020. Farm and Ranch Business Management. 4. Discusses economic principles, business methods and science applied to organization and operation. Includes measurements of size of business; rate and efficiency of production. (Normally offered fall semester)

3400 [4400]. Agricultural Law. 3. [C2↔WB] Surveys legal issues and principles of practical concern to agriculture and examines legal institutions authorized to carry out laws affecting agriculture. *Prerequisite:* WA and junior standing. (Normally offered fall semester)

3860 [4860]. Economics of World Food and Agriculture. 3. [C2, G1↔G] Explores global food and agricultural issues with a focus on hunger, chronic malnutrition, and diets of people in developing countries. Introduces basic economic concepts pertinent to understanding and analyzing global food markets and prices and to evaluating government policies designed to reduce food insecurity, enhance diets, and promote agricultural development. Cross listed with INST 3860. *Prerequisite:* An economics principles course. (Normally offered spring semester)

4050. Agribusiness Marketing. 3. Students develop a strategic marketing plan for an agricultural and food product. Content includes study of aspects of the global food industry influencing consumer demand; contemporary topics in food marketing and policy; agricultural supply marketing; marketing research methods; marketing profitability measures; pricing; new product introduction; branding, and industry competitive analysis. *Prerequisites:* AGECE 1020 or ECON 1020 and MATH 1400. (Normally offered spring semester)

4060. Agribusiness Management. 3. [M3♦(none)] Applies quantitative, economic, financial and managerial analysis to agribusiness sector. *Prerequisites:* AGEC 1020 and MATH 1400. (Normally offered fall semester)

4070. Agricultural Sales. 3. Applies transactional analysis for understanding human behavior in agribusiness sales. Introduces experimental learning and fundamentals of agribusiness sales. *Prerequisites:* AGEC 1020 and COJO 1010. (Normally offered spring semester)

4230. Intermediate Econometric Theory. 3. Covers simple and multiple regression models, problems of estimation, hypothesis and diagnostic testing, dummy variable, autoregressive and distributed lag models, and time-series analysis. The objective is to understand the underlying theory of econometric modeling and obtain operational ability to construct, estimate, and test econometric models. Cross Listed with ECON 4230; dual listed with AGEC 5230. *Prerequisites:* ECON 3020, STAT 2050 and MATH 2350. (Normally offered spring semester)

4450. Negotiation. 3. Examines how to use negotiation to resolve conflict. Describes conflict; outlines way to address conflict; examines different negotiation strategies and the impact of cognitive bias, power, ethics, and individual and cultural differences; and explores mediation practices. Students complete negotiations, role-plays, and questionnaires. Dual listed with AGEC 5450. *Prerequisites:* COJO 1010 and junior standing.

4460 [5460]. Agriculture and Economic Development. 3. Examines the roles of agriculture in the transformation of the economics of underdeveloped countries. Examines development theories, case studies and analytical techniques. *Prerequisites:* AGEC 1010, 1020 and a G course.

4500 [650]. Agricultural Finance. 3. Principles of financial management; compounding and discounting; leverage and capital budgeting and alternatives in resource control. *Prerequisite:* AGEC 1020 or equivalent. (Normally offered fall semester)

4600. Community Economic Analysis. 3. Analysis of regions and rural communities; their problems, socioeconomic characteristics, land use and economic development. Provides training in regional economic analysis, fiscal impact analysis and benefit cost analysis. Dual listed with AGEC 5600. *Prerequisites:* ECON 3010, 3020, and MATH 1400.

4640. Advanced Farm/Ranch Management. 3. [M3♦(none)] Tools of management decision-making applied to problems of farm-ranch management and resource acquisition and use. *Prerequisites:* AGEC 1020, 2020 and MATH 1400. (Normally offered spring semester)

4660. Community and Economic Development. 3. Community development from an interdisciplinary perspective, integrating theory, concepts and methods from sociology, economics, political science, and community development. Students learn how community theory can be used to design and support effective economic development programs. Includes readings, lectures, guest lectures, field trips and community analysis projects. Dual listed with AGEC 5660. *Prerequisites:* AGEC/ECON 1020 or SOC 2090 and junior standing.

4700. Economics of Range Resources. 3. Applies economic and decision theory to management and allocation of public and private range resources. *Prerequisite:* AGEC 1020 or equivalent. (Normally offered fall semester)

4710. Natural Resource Law and Policy. 3. [C2♦(none)] Legal and economic examination of laws intended to resolve environmental conflicts. Surveys economic rationales both for private property and government intervention in environmental disputes; content of selected environmental laws in the U.S.; and basic principles of environmental mediation. *Prerequisites:* AGEC 1020, ECON 1020 or equivalent and 3 hours of business law or agricultural law. (Offered fall semester of even-numbered years)

4720. Water Resource Economics. 3. Presents principles and procedures appropriate to water resource allocation and development decisions. Studies agricultural, recreational, industrial and other uses of water. Includes a field trip. *Prerequisite:* AGEC 1020 or equivalent; QB course, WB course; senior standing. (Offered fall semester of even-numbered years)

4740. Agricultural Policy. 3. [C2♦(none)] Identifies problems in agriculture and considers alternative programs. *Prerequisite:* AGEC 1020 or equivalent. (Offered spring semester of odd-numbered years)

4750. Natural Resource Planning Economics. 3. Examines major federal and state natural resources planning programs to identify economic consequences of different resource-use alternatives and stated economic objectives. Discusses economic models and analytical procedures in terms of relevancy to economic issues associated with resource planning actions. Considers economic results needed to resolve resource conflicts in terms of available models and procedures. Students analyze an appropriate natural resources or environmental plan and present results (consequences and implications) as economic component of overall plan. *Prerequisite:* AGEC 1020 or equivalent; QB course, WB course, senior standing. (Offered spring semester of odd-numbered years)

4830. Agricultural Commodities and Futures Markets. 3. Economics of price determination for agricultural commodities and development of pricing strategies in cash and futures markets. *Prerequisite:* AGEC 1020 or equivalent. (Normally offered fall semester)

4840. Agricultural Market Analysis. 3. [C2♦(none)] Applies economic theory to an analysis of economic organization and operation of agricultural markets, including price behavior. *Prerequisites:* MATH 1400 and ECON 3020. (Offered spring semester of odd-numbered years)

4880. International Agricultural Trade, Markets and Policy. 3. [C2, G1♦G] International agricultural commodity markets, product markets and market channels are characterized and examined. Presents economic theory relevant to description and analysis of international markets. Characterizes and analyzes historical and contemporary U.S. commercial trade policy and agricultural policy and their effect on markets. *Prerequisites:* AGEC 1010 and 1020 or equivalent and ECON 3020. (Offered spring semester of even-numbered years)

4890. Special Topics in _____. 1-3 (Max. 6). Accommodates seminar series or course offering by visiting faculty whose subject matter is not included in other courses. *Prerequisites:* junior standing and/or consent of instructor. (Offered based on sufficient demand and resources)

4910. Problems in Agricultural Economics. 1-3 (Max. 6). Consists of supervised study and investigation on topics of current importance in agricultural economics. *Prerequisites:* 12 hours in AGEC or ECON and consent of instructor.

4930. Agricultural Economics Internship. 1-6 (Max. 6). Provides practical agricultural business firm and/or agency experience. Develops working knowledge of how basic economic concepts are used by firms and agencies in policy and procedures development and decision making by the organization. *Prerequisites:* 10 hours of AGEC and approval of faculty supervisor.

4950. Senior Seminar and Thesis I. 1. [W3♦WC] Beginning of preparation and presentation of senior research thesis relevant to agriculture economics field. *Prerequisites:* 15 hours of AGEC and/or ECON and WB writing course.

4960. Senior Seminar and Thesis II. 2. [W3♦WC] Final preparation and presentation of senior thesis and writing of final report. *Prerequisite:* AGEC 4950.

4965. Agribusiness Strategy and Ethics Capstone. 3. [(none)♦WC] Integrates economic theory, strategic management, and ethical principles into management decision analysis related to food, agricultural, and resource-based industries. Students develop the appropriate professional documents, interpersonal communication skills, and oral presentation skills to pursue career in agribusiness management. Emphasis is placed on refining students' professional writing abilities. *Prerequisites:* senior standing, 15 hours of AGEC and/or ECON and WB writing course.

Department of Animal Science

101 Animal Science/Molecular Biology Bldg., 766-2224

FAX: (307) 766-2355

Web site: uwyo.edu/anisci

Department Head: Doug Hixon

Professors:

STEPHEN P. FORD, B.S. Oregon State University 1971; M.S. West Virginia University 1973; Ph.D. Oregon State University 1977; Professor of Animal Science 2000.

DOUGLAS L. HIXON, B.S. University of Illinois 1968; M.S. 1970; Ph.D. 1980; Professor of Animal Science 1995, 1986; Head of Department of Animal Science 2001.

BRET W. HESS, B.S. University of Nevada, Reno 1991; M.S. 1993; Ph.D. University of Missouri-Columbia 1996; Professor of Ruminant Nutrition 2008, 2002.

STEVEN W. HORN, B.S. Colorado State University 1969; M.S. 1974; Ph.D. 1979; Professor of Animal Science 1993.

RICHARD J. MCCORMICK, B.S. University of Connecticut 1979; M.S. 1980; Ph.D. Kansas State University 1985; Professor of Animal Science 1997, 1985.

GARY E. MOSS, B.S. Montana State University 1969; M.S. 1972; Ph.D. Washington State University 1977; Professor of Animal Science 1994, 1985.

WILLIAM J. MURDOCH, B.S. Delaware Valley College of Science and Agriculture 1975; M.S. West Virginia University 1977; Ph.D. 1980; Professor of Animal Science 1991, 1980.

DANIEL C. RULE, B.S. University of California, Davis 1977; M.S. 1980; M.S. Washington State University; Ph.D. Iowa State University 1984; Professor of Animal Science 1999, 1987.

Associate Professors:

PAULA. LUDDEN, B.S. University of Nebraska-Lincoln 1991; M.S. Purdue University 1994; Ph.D. University of Missouri-Columbia 1997; Associate Professor of Ruminant Nutrition 2004, 1998.

WARRIE J. MEANS, B.S. Colorado State University 1979; M.S. 1982; Ph.D. 1985; Associate Professor of Animal Science 2002, 1992.

STEVEN I. PAISLEY, B.S. University of Wyoming 1993; M.S. 1995; Ph.D. Oklahoma State University 1998; Extension Beef Cattle Specialist; Associate Professor of Animal Science 2007, 2001.

ROBERT H. STOBART, B.S. Montana State University 1971; M.S. 1976; Ph.D. Texas A&M University 1982; Associate Professor of Animal Science 1988, 1982.

Assistant Professors:

BRENDA M. ALEXANDER, B.S. University of Wyoming 1986; M.S. 1988; Ph.D. 1999; Assistant Professor of Animal Science 2006.

KRISTI M. CAMMACK, B.S. South Dakota State University 1999; M.S. University of Nebraska-Lincoln 2001; Ph.D. University of Missouri Columbia 2005; Assistant Professor of Animal Science 2006.

MIN DU, B.S. Zhejiang University 1990; M.S. China Agricultural University 1993; Ph.D. Iowa State University 2001; Assistant Professor of Animal Science 2003.

SCOTT L. LAKE, B.S. University of Nevada 1998; M.S. 2001; Ph.D. University of Wyoming 2005; Assistant Professor of Animal Science 2008.

MEIJUN ZHU, B.S. China Agricultural University 1991; M.S. 1994; Ph.D. Iowa State University 2004; Assistant Professor of Animal Science 2008.

Adjunct Professors:

Thomas Hansen, John Johnston, Tom McDonald, Peter Nathanielsz, Mark Nijland, Donal Skinner, D. Paul Thomas, Heywood Sawyer

Professors Emeriti:

Ray Field, Frank Hinds, Conrad Kercher, Johannes Nel, Bibek Ray

The Department of Animal Science offers a variety of courses in animal and food science. The department has modern laboratories and excellent animal facilities including a livestock teaching arena and a meat processing facility.

The Department of Animal Science and the Department of Veterinary Science have a combined curriculum under animal and veterinary science. The curriculum has options in production, range livestock, business, communication, animal biology, preveterinary medicine and meat science and food technology. The curriculum leads to a wide variety of career opportunities for animal and veterinary science graduates.

Animal and Veterinary Sciences

The Department of Animal Science and the Department of Veterinary Sciences have combined their efforts to offer several degree options leading to the bachelor of science degree in animal and veterinary sciences. Courses in animal science, food science, and pathobiology are the core offerings in the various options.

Agriculture, in its broadest definition, is the nation's largest industry. Livestock production is Wyoming's largest agricultural enterprise. Animal agriculture and its associated industries offer many opportunities for the interested student. Whether a student is interested in production livestock, allied fields such as meat science, business or animal health, or wants to apply to a college of veterinary medicine, the degree tracks offered will form the basis for a challenging career in animal agriculture/biology. The various options provide maximum flexibility to meet the changing needs of students and their employers.

For students interested in pursuing advanced research, M.S. and Ph.D. degrees are offered (see the *UW Graduate Bulletin* for details).

Several degree options allow for specialization and graduate or professional school preparation. A brief description of each option and the educational opportunities they provide is given with the course requirements.

A grade of C or better must be earned in the following courses when the courses are required in the individual option for completion of the degree: ANSC 3010, 3100, 4120, 4540, 4630; FDSC 3060, PATB 4110, LIFE 1010, 2022.

Students are encouraged to participate in activities related to their degree option. The university has judging teams in livestock, meats and wool. Each team travels and participates in at least one major exposition a year. Each year, the Academic Quadrathlon competition is held, combining practical and classroom skills for students. Field trips, as practical teaching aids in many classes, are scheduled throughout the year. Internships are available to gain practical experience. Student organizations such as the Block and Bridle Club, Food Science Club, Microbiology Club, and the Pre-vet Club provide additional educational and recreational opportunities.

Production Option

This option provides a strong background in livestock production and management. Students interested in livestock production should enroll in this option.

Animal and veterinary sciences	37
Required courses: ANSC 1010, 3010, 3100, 4100, 4120, 4540 and two courses selected from 3150, 4220 or 4230; PATB 4110.	
Agricultural sciences	10
Required courses: FDSC 2040 and 3060	
Biological sciences	11
Required courses: LIFE 1010, 2022, 3050	
Physical sciences	7-8
Required courses: CHEM 1000; CHEM 2300 or ANSC 2010	
Quantitative reasoning, statistics or computer science	8
Required courses: MATH 1400 or 1450; plus at least one course in statistics or computer science (including AGRI 1010)	
Written and Oral Communication Skills	12
Required courses: WA, WB, ANSC 4630 (WC) and COJO 1010	
Cultural Context	9
See University Studies Program	
U.S. and Wyoming Constitutions	3
See University Studies Program	
Global Awareness	3
See University Studies Program	
Physical Activity and Health	1
U.S. Diversity, Information Literacy and Intellectual Community	7-8
Required: ANSC 1000 (I); remainder see University Studies Program	
Electives to total	128
Suggested courses: AGECE 2020, 4640	

Range Livestock Option

This option emphasizes range livestock management. Students interested in the management of livestock and range resources should enroll in this option.

Animal and veterinary sciences 32
 Required courses: ANSC 1010, 3010, 3100, 2020 or 4100, 4120, 4540, 4220, 4230 or 3150, 4150; PATB 4110.

Rangeland ecology and watershed management 17
 Required courses: REWM 2000, 2500, 3500, 4000, 4330, 4900

Biological sciences 11
 Required courses: LIFE 1010, 2022, and 3050

Agricultural sciences 11
 Required courses: AGECE 2020; FDSC 2040, 3060

Physical sciences 7-8
 Required courses: CHEM 1000; CHEM 2300 or ANSC 2010

Quantitative reasoning, statistics or computer science 8
 Required courses: MATH 1400 or 1450; plus at least one course in statistics or computer science (including AGRI 1010)

Written and Oral Communication Skills 12
 Required courses: WA, WB; ANSC 4630 (WC) and COJO 1010

Cultural Context 9
 See University Studies Program

U.S. and Wyoming Constitutions 3
 See University Studies Program

Global Awareness 3
 See University Studies Program

Physical Activity and Health 1

U.S. Diversity, Information Literacy and Intellectual Community 7-8
 Required: ANSC 1000 (I); remainder see University Studies Program

Electives to total 128
 Suggested Courses: AECL 2010; REWM 4530, 4850; AGECE 4640

Business Option

Students desiring a strong background in business in addition to the basic courses in animal and veterinary science should enroll in this option. Graduates will be qualified for careers in the livestock agribusiness industry.

Animal and veterinary sciences 32
 Required courses: ANSC 1010, 3010, 3100, 2020 or 4100, 4120, 4540 and two courses selected from 3150, 4220, 4230 or 4240; PATB 4110

Agricultural economics and business courses 27
 AGECE 1010, 1020, 3860, 4050, 4060 or 4880; ACCT 2010

Agricultural sciences 4
 Required course: FDSC 3060

Biological sciences 11
 Required courses: LIFE 1010, 2022, 3050

Physical sciences 7-8
 Required courses: CHEM 1000; CHEM 2300 or ANSC 2010

Quantitative reasoning, statistics or computer science 8
 Required courses: MATH 1400 or 1450; STAT 2050; plus 2 additional hours in math, statistics or computer science (including AGRI 1010)

Written and Oral Communication Skills 12
 Required courses: WA, WB; ANSC 4630 (WC) and COJO 1010

Cultural Context 9
 See University Studies Program

U.S. and Wyoming Constitutions 3
 See University Studies Program

Global Awareness 3
 See University Studies Program

Physical Activity and Health 1

U.S. Diversity, Information Literacy and Intellectual Community 7-8
 Required: ANSC 1000 (I); remainder see University Studies Program

Electives to total 128

Communication Option

Students in this option obtain a basic education in animal and veterinary science and also acquire in-depth communication skills. Students interested in careers in agriculture communications with emphasis on the livestock industry should enroll in this option.

Animal and veterinary sciences 32
 Required courses: ANSC 1010, 3010, 3100, 2020 or 4100, 4120, 4540 and two courses selected from 3150, 4220 or 4230; PATB 4110

Agricultural sciences 18
 Required courses: FDSC 3060

Biological sciences 11
 Required courses: LIFE 1010, 2022, 3050

Physical sciences 7-8
 Required courses: CHEM 1000; CHEM 2300 or ANSC 2010

Quantitative reasoning, statistics or computer science 8
 Required courses: MATH 1400 or 1450; plus at least one course in statistics or computer science (including AGRI 1010)

Written and Oral Communication Skills 26
 Required courses: WA, WB; ANSC 4630 (WC) and COJO 1010 plus 14 additional credit hours in COJO.

Cultural Context 9
 See University Studies Program

U.S. and Wyoming Constitutions 3
 See University Studies Program

Global Awareness 3
 See University Studies Program

Physical Activity and Health 1

U.S. Diversity, Information Literacy and Intellectual Community 7-8
 Required: ANSC 1000 (I); remainder see University Studies Program

Electives to total 128

Animal Biology Option

This option within the major requires more complete and stringent basic sciences. Students may complete premedical requirements or other pre-professional allied health requirements while completing a B.S. degree that prepares them for alternate career choices. Selected courses provide opportunity for more complete exposure in both biological sciences and pathobiology. Possible alternatives to professional schools include graduate school admission or employment by government or industry in research, promotion or sales.

Because of the variation in pre-professional requirements for different professional programs, students are encouraged to determine the specific requirements of the programs in which they are interested.

Animal and veterinary sciences 30
 Required courses: ANSC 1010, 3010, 3100, 4120; PATB 4400; Suggested courses: ANSC 4100, 4540, 4260; PATB 4110, 4500, 4140, 4710

Agricultural sciences 4
 FDSC 3060

Biological sciences 18-19
 Required courses: LIFE 1010, 2022, 3050; MICR 2240 or MOLB 2210; PSYC 3600; Suggested courses: LIFE 3600; ZOO 4140, 4340

Physical and chemical sciences 28-34
 Required courses: CHEM 1020, 1030, 2300 (or 2420, 2440); PHYS 1110, 1120; MOLB 3610 and 4100/4105 or MOLB 4600/4610

Quantitative reasoning, statistics and computer science 13-14
 Required courses: MATH 1400/1405 or 1450, 2220; STAT 2050; students lacking basic skills with personal computers are encouraged to enroll in COSC 1200 or AGRI 1010

Written and Oral Communication Skills 12
 Required courses: WA, WB; ANSC 4630 (WC) and COJO 1010

Cultural Context 9
 See University Studies Program

U.S. and Wyoming Constitutions 3
 See University Studies Program

Global Awareness 3
 See University Studies Program

Physical Activity and Health 1

U.S. Diversity, Information Literacy and Intellectual Community 7-8
 Required: ANSC 1000 (I); remainder see University Studies Program

Electives to total 128
 Suggested courses: ANSC 4100, 4150, 4260, 4540, PATB 4100, 4500, 4140, 4710

Meat Science and Food Technology Option

Students taking this option will have an excellent background for entering the meat industry. The food industry is the largest employer in this country and offers a wide variety of career opportunities.

Animal and veterinary sciences	14
Required courses: ANSC 1010, 3010, 3100 or FCSC 4145; PATB 4110	
Food science	28
FDSC 1410, 2040, 3060, 4060, 4090, 4100, 4720, 4760, 4800, 4810	
Agricultural Economics/Business	12
Required course: AGECE 3860	
Biological sciences	12-13
Required courses: LIFE 1010, 2022; MOLB 2210 or MICR 2240	
Physical sciences	7-8
Required courses: CHEM 1000; CHEM 2300 or ANSC 2010	
Quantitative reasoning, statistics, computer science	7
Required courses: MATH 1400; STAT 2050	
Written and Oral Communication Skills	12
Required courses: WA, WB; ANSC 4630 (WC) and COJO 1010	
Cultural Context	9
See University Studies Program	
U.S. and Wyoming Constitutions	3
See University Studies Program	
Global Awareness	3
See University Studies Program	
Physical Activity and Health	1
U.S. Diversity, Information Literacy and Intellectual Community	7-8
Required: ANSC 1000 (I); remainder see University Studies Program	
Electives to total	128
Suggested courses: PHYS 1050, MOLB 3610, FDSC 4900, FCSC 4145	

Pre-Veterinary Medicine Option

This option is especially designed to prepare students for application to colleges of veterinary medicine. There is a strong emphasis on the biological, biomedical and physical sciences. This curriculum is also appropriate for students wishing to pursue graduate school opportunities, other professional school applications, or careers in many areas of agribusiness. A minimum of three years of formal course work is required before one can apply to a college of veterinary medicine. Students accepted before completion of their B.S. degree can transfer credits back to UW to complete their degree requirements. Wyoming does not have a college of veterinary medicine. Faculty advisers insure that students meet the variable preveterinary requirements for application to colleges of veterinary medicine in their home state or region.

Animal and veterinary sciences	26
Required courses: ANSC 3010, 3100, 4120 and one course selected from 3150, 4220 and 4230; PATB 4110, 4400, 4500 and 4710	
Agricultural sciences	4-5
Required courses: MOLB 2210 or MICR 2240	
Biological sciences	11
LIFE 1010, 2022, 3050	
Chemistry and physics	24-28
Required courses: CHEM 1020, 1030, 2300; MOLB 3610, 4100, 4105 or CHEM 1020, 1030, 2420, 2440; MOLB 3610; PHYS 1110, 1120 or PHYS 1050	
Quantitative reasoning and statistics	9-10
Required courses: MATH 1400 and 1405 or 1450; STAT 2050	
Written and Oral Communication Skills	12
Required courses: WA, WB, WC (ANSC 4630 rec.), and COJO 1010	
Cultural Context	9
See University Studies Program	
U.S. and Wyoming Constitutions	3
See University Studies Program	
Global Awareness	3
See University Studies Program	
Physical Activity and Health	1
U.S. Diversity, Information Literacy and Intellectual Community	7-8
Required: ANSC 1000 (I); remainder see University Studies Program	
Electives to total	128
Suggested courses: ANSC 4100, 4150, 4260, 4540, LIFE 4600, ZOO 4140, 4340; FDSC 3060	

Agriculture Education with Concurrent Major in Animal and Veterinary Science

This program consists of 128 total hours. Minimum 2.75 cumulative GPA and minimum 2.5 content GPA required. This major will be advised in the College of Education with a secondary adviser in Animal Science. *Refer to the College of Education for specific curriculum requirements.*

Undergraduate Minor

The Departments of Animal Science and Veterinary Sciences offer a minor in animal and veterinary science for non-majors. The courses required for a minor must be taken for a letter grade and the student must receive a grade of C or better in each course. Courses required are: ANSC 3010, 3100, 4120, 4540; FDSC 3060; PATB 4110 and at least one of the following: ANSC 3150, 4220 or 4230. The Department of Animal Science or Veterinary Sciences undergraduate minor adviser may be contacted by students needing assistance or having questions

Animal Science (ANSC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Intellectual Community in Animal and Veterinary Sciences. 1. [(none)↔I, L] Introduction to the field of animal and veterinary sciences and the purpose and philosophy of higher education. Major issues in the field will be explored through writing and class discussion. The undergraduate curriculum and career options are also discussed.

1010. Livestock Production. 4. Scope of industry, management of beef cattle, sheep, dairy cattle, horses, swine and poultry. Introduces breeding and genetics, reproduction and nutrition of domestic animals. Acquaints students with wool, meat, dairy and poultry products. (Normally offered fall semester)

1030. Equine Management. 3. An overview of the horse industry and proper way to manage horses. (Normally offered spring semester)

1070. Livestock Fitting and Showing. 1. Teaches fitting and showing techniques for domestic livestock. Students will have the opportunity to fit an animal of their choice and participate in the Little International Livestock Show at the Animal Science Livestock Center. (Normally offered fall semester)

2010. Domestic Animal Metabolism. 3. Integrates cellular and whole-animal metabolism through introduction to metabolic regulation. Introduces students to the nomenclature, structures and functions of cellular metabolites and vitamins. Knowledge of chemical structure will be applied to cellular reactions in various tissues of domestic animals. Ruminants and non-ruminants will be contrasted. *Prerequisite:* CHEM 1000. (Normally offered spring semester)

2020. Feeds and Feeding. 4. Nutrient classification and use, feed value, ration formulation and feeding domestic animals. (Normally offered spring semester)

2035. Companion Animal Nutrition. 3. Nutrition and biology of digestion of companion/pet animals. Fundamentals of nutrition and the nutrients, as well as appropriate terminology will be covered, with direct application to companion animals. *Prerequisites:* none. (Offered spring semester)

3010. Comparative Anatomy and Physiology of Domestic Animals. 4. [S1↔(none)] Teaches comparative anatomy and physiology of digestion, circulation, production, reproduction and environment of farm animals. *Prerequisites:* LIFE 1010 and 2022 with a minimum grade of C. (Normally offered spring semester)

3100. Principles of Animal Nutrition. 3. Description of the nutrients, nutrient digestion and absorption, and nutrient function within the body of various domesticated animals. *Prerequisite:* CHEM 2300 or ANSC 2010. (Normally offered fall semester)

3150. Equine Nutrition and Physiology. 3. Provides general knowledge of nutrition, physiology and biochemistry of exercise and reproductive processes of equine. *Prerequisite:* 4 hours of biology. (Normally offered fall semester)

3550. Livestock Judging. 1-2 (Max. 6). Livestock judging only. Students representing the university in national and regional contests are selected from this course. Requires field trips. *Prerequisite:* 6 hours in animal science.

4061. Cell Signaling. 3. Cell signaling pathways in animal growth and development. Defines how cells respond to external stimuli. Includes: G-protein couple signaling, calcium signaling, growth factor associated signaling, redox signaling, lipid related signaling, and apoptosis. Dual listed with ANSC 5061. *Prerequisites:* MOLB 3610 or an equivalent biochemistry or cell biology course. (Normally offered fall semester)

4100. Nutritional Management. 3. Integration and application of the principles of nutrition. Addresses nutrient requirements, feed composition and nutritional value, in addition to feeding management strategies for various classes of farm animals. Provides practical nutritional experience through laboratory. Dual listed with ANSC 5100. *Prerequisite:* ANSC 3100.

4120. Principles of Mammalian Reproduction. 3. Overview of the anatomy, physiology, endocrinology and biochemistry of reproductive processes in male and female mammals. Dual listed with ANSC 5120. *Prerequisite:* a course in systemic anatomy and physiology/endocrinology. (Normally offered fall and spring semesters)

4130. Management of Reproduction. 3. Lecture-laboratory course. Introduces methods of manipulating reproduction within livestock management systems. Includes artificial insemination, diagnosis of pregnancy, induction and control of estrus and ovulation, induction of parturition, embryo transfer and control and prevention of diseases. *Prerequisite:* ANSC 4120. (Normally offered spring semester)

4150. Physiology of Ruminant Digestion. 3. Anatomical structure, function and symbiotic relationship of ruminant digestive system. Dual listed with ANSC 5150. *Prerequisite:* ANSC 3100. (Normally offered spring semester)

4210. Wool Structures and Properties. 2. Chemical structure and reactions of wool fiber, as well as physical properties as related to structure. *Prerequisite:* CHEM 2300 or equivalent. (Offered based on sufficient demand and resources)

4220. Advanced Beef Production and Management. 3. Integrates animal breeding, nutrition and reproductive physiology in beef production management schemes. Emphasizes analysis and decision making. Consists of two hours of lecture and two hours of lab, with approximately one-half of labs meeting at Animal Science Livestock Center. *Prerequisites:* ANSC 3100, 4120, 4540. (Normally offered spring semester)

4230. Advanced Sheep Production Management. 3. Integrates animal breeding, nutrition and reproductive physiology in sheep production management schemes. *Prerequisites:* ANSC 3100, 4120, 4540. (Normally offered spring semester)

4240 [3330]. Advanced Swine Production and Management. 3. Integrates animal breeding, nutrition and reproductive physiology in swine production management schemes. Consists of two hours of lecture and two hours of lab, with at least one-half of labs meeting at Animal Science Livestock Center. *Prerequisites:* ANSC 3100, 4120, or 4540. (Normally offered fall semester)

4260. Mammalian Endocrinology. 3. Introduces principles of endocrinology, role of endocrine systems in regulating metabolism, growth, reproduction and lactation in mammals. Dual listed with ANSC 5260. *Prerequisite:* ANSC 3010, ZOO 2110 or 4220. (Normally offered fall semester)

4500. Problems in Animal Science. 1-3 (Max. 6). Provides opportunity for students to conduct supervised research in breeding, genetics, management, nutrition and physiology. *Prerequisites:* 6 hours in animal science and consent of instructor. (Offered fall, spring and summer)

4540. Principles of Animal Breeding. 3. [M3↔(none)] Discusses genetic principles underlying animal improvement; introductory population genetics; heritability; systems of mating; and selection. *Prerequisites:* MATH 1000 or a statistics course; LIFE 3050. (Normally offered fall semester)

4550. Internship in Animal Science. 1-8 (Max. 8). Provides opportunities to acquire experience in a field of interest to the student. Offers learning experiences that are difficult, if not impossible, to realize in classroom settings. Following off-campus educational experience, students are more able to evaluate potential career opportunities and select additional classes on-campus to complement career direction. Offered S/U grade only. *Prerequisites:* sophomore standing; 2.5 GPA. (Offered fall, spring and summer)

4630. Topics and Issues in Animal Science. 3. [W3↔WC] Writing-intensive course that focuses on writing projects related to current topics and issues in animal science. Emphasizes writing skills, strategies, information gathering and critical judgment. Assignments include short and long papers, resumes, letters of transmittal, and oral presentations. *Prerequisites:* senior standing and completion of WA and WB writing requirements. (Offered spring semester)

4700. Behavior of Domestic Animals. 2. Applied ethology emphasizing the behavioral biology of domestic and companion animals with a concentration on causes and treatments of unwanted behaviors. Ethological approaches include evolutionary, genetic, neural, and hormonal considerations. The foundations of classical and operant conditioning are discussed in relation to behavior modification techniques. *Prerequisites:* LIFE 2022 or equivalent; ANSC 3010.

Food Science Section

Food science is the application of basic sciences to the processing, quality control, storage, distribution and consumer use of food products. The microbiological, chemical and physical characteristics of foods as related to food processing and product quality are studied. Major emphasis is placed in the area of animal food products.

Food Science (FDSC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1410. Food and Our Well Being. 3. Introductory course dealing with current questions and concerns about foods. Considers food composition, effects of food processing, food labeling, diet, degenerate diseases and general health. Students become familiar with foods and food industry. (Normally offered spring semester)

1490. Safety of Our Food. 4. [S1↔(none)] For students interested in knowing what makes a food, the most basic necessity of life, safe or unsafe. This will be explored through discussions on factors that make a food safe or unsafe, risk-benefit concepts, the real safety issues and the role of regulatory agencies and consumers to ensure safety of food. When possible, outside experts will be invited to give their views during which students will be encouraged to discuss the issues. Laboratory is required. Course credit cannot be applied toward degree requirements in food science. (Offered once a year)

2040. Principles of Meat Animal Evaluation. 3. Live animal and carcass evaluation of beef, sheep and swine. Slaughter, meat inspection and anatomy are discussed. (Normally offered fall semester)

2100. Meat Evaluation. 1-2 (Max. 6). Students who represent the university in national and regional contests are selected from this class. Requires field trips.

3060. Principles of Meat Science. 4. Fabrication of carcasses into cuts and associated processing techniques; muscle growth, structure and metabolism; conversion of muscle into meat; fresh meat properties and quality; chemical properties of meat; meat microbiology, preservation and storage; meat by-products; HACCP. *Prerequisites:* CHEM 1000 and LIFE 1010.

4060. Processed Meats. 3. [M3♦(none)]
Processes and ingredients used in the manufacturing of muscle foods, including discussions on raw ingredients, formulations, curing, cooking/chilling, equipment, fermentation, drying and packaging. Prerequisites: CHEM 1000, LIFE 1010 or equivalent; junior standing. (Normally offered fall semester of odd-numbered years)

4090. Food Microbiology. 3. Discusses microorganisms and theory of their growth and survival in relation to spoilage and preservation of foods and health hazards in foods. Dual listed with FDSC 5090; cross listed with MICR 4090. *Prerequisite:* MOLB 2210. (Normally offered spring semester)

4100 [610]. Laboratory Techniques in Food Microbiology. 1. Lab techniques used in food microbiology. Dual listed with FDSC 5100; cross listed with MICR 4100. *Prerequisite:* FDSC 4090 or 5090, taken concurrently. (Normally offered spring semester)

4720. Food Chemistry. 3. Studies chemical composition of foods and food products. Emphasizes processing and storage. Dual listed with FDSC 5720. *Prerequisite:* CHEM 2300. (Normally offered fall semester)

4760. Meat Science. 3. Properties of muscle tissue which relate to muscle function, conversion of muscle to meat and functional characteristics of meat. *Prerequisite:* FDSC 2040, 2060. (Normally offered fall semester)

4800. Problems in Food Science. 1-3 (Max. 6). Examines special problems related to quality control, formulation and processing of meat, poultry and dairy foods. Offers research techniques and instrumentation in foods. *Prerequisites:* 6 hours in FDSC, 6 hours in chemistry and consent of instructor. (Offered fall, spring and summer)

4810. Food Science Seminar. 1 (Max. 2). Discusses current food science topics. *Prerequisite:* 6 hours in food science. (Normally offered spring semester)

4900. Food Safety. 3. Issue-oriented lecture/discussion course. Includes topics such as what is safe food, what makes food unsafe and how safety of a food is determined. Presents laws and regulations on food safety. In addition to a text, area experts are invited to discuss important issues. *Prerequisite:* 6 hours of biological science. (Offered fall semester of odd-numbered years)

The Department of Veterinary Sciences section, including Pathobiology course offerings begins on page 100.

Earth System Science Program

6072 Engineering Building, 755-4955

FAX: (307) 766-2635

Web site: www.uwyo.edu/ESS

Director: Robert D. Kelly

Earth System Science (ESS) is an interdisciplinary, science-oriented, undergraduate program focusing on the interactions between the various components composing the Earth system: the biosphere, geosphere, lithosphere, hydrosphere, atmosphere, and anthrosphere. Students earning a BS degree in ESS are required to declare a Concentration in one of the participating programs, which include Anthropology, Atmospheric Science, Biology, Botany, Geography, Geology and Geophysics, Secondary Education, and Soil Science. This list will expand as the program grows. ESS is administered under a committee of Deans, and the program Departments reside in the Colleges of Agriculture, Arts and Sciences, Education, and Engineering. The program is currently administered in Atmospheric Science. See page 314 for more information.

Department of Family and Consumer Sciences

251 Agriculture Building, 766-4145

FAX: (307) 766-5686

Web site: www.uwyo.edu/family

Department Head: Karen Williams

Professors:

DONNA M. BROWN, B.Sc. University of New South Wales, Australia 1983; Ph.D. 1987; Professor of Textiles and Merchandising 2004, 1993, 1987.

MICHAEL LIEBMAN, B.S. University of New Hampshire 1974; M.S. Virginia Polytechnic Institute and State University 1977; Ph.D. 1980; Professor of Human Nutrition 1994, 1985.

VIRGINIA B. VINCENTI, B.S. Mansfield University of Pennsylvania 1968; M.S. The Pennsylvania State University 1975; Ph.D. 1981; Professor of Family and Consumer Sciences 1992.

RANDOLPH R. WEIGEL, B.S. Colorado State University 1971; M.S. Kansas State University 1973; Ph.D. Iowa State University 1985; Professor of Family and Consumer Sciences 2004, 1993, 1986.

KAREN WILLIAMS, B.A. University of Illinois 1972; B.S. University of Wyoming 1978; M.A. Pacific Oaks College 1987; Ph.D. University of Wyoming 1993; Professor of Child and Family Studies 2006, 1995.

Associate Professors:

K. SHANE BROUGHTON, B.S. Colorado State University 1981; M.S. Washington State University 1985; Ph.D. 1988; Associate Professor of Human Nutrition 1996, 1990.

BRUCE A. CAMERON, B.Sc. University of New South Wales, Australia 1983; Ph.D. 1986; Associate Professor of Textiles and Merchandising 1997, 1986.

SONYA S. MEYER, B.S. Emporia State University 1973; M.S. Kansas State University 1979; Ph.D. 1986; Associate Professor of Textiles and Merchandising 1992, 1986.

RHODA SCHANTZ, B.S. North Dakota State University 1976; M.S. 1978; Ph.D. Kansas State University 1988; Associate Professor of Food and Nutrition 1995, 1990.

Assistant Professors:

D. ENETTE LARSON-MEYER, B.S. University of Wyoming 1987; M.S. MGH Institute of Health Professions, Boston 1990; Ph.D. University of Alabama at Birmingham 1998; Assistant Professor of Human Nutrition and Food 2005.

KARI MORGAN, B.S. University of Wyoming 1991; M.S. University of Maryland 1993; Ph.D. University of Wisconsin-Madison 1998; Assistant Professor of Child and Family Studies 2005.

CHRISTINE WADE, B.S. Willamette University 2001; M.S. University of Wyoming 2005; Ph.D. 2008; Assistant Professor of Human Development and Family Studies 2008.

Academic Professionals:

Mark Bittner, Suzanne Pelican, Treva Sprout

Distance Instructors:

Dianne Barden, Susan Blumel-Berg, Heidi Christensen, Gail Gordon, Gail Lee, LisaMarie Mariglia

Professor Emeritus:

Margaret Boyd, Saul Feinman, Judith A. Powell

The department's mission is to strengthen rural families and communities while preparing students to solve complex problems in today's society. The uniqueness of this discipline is its holistic approach to understanding critical problems of individuals and families, including consumer problems. This broad approach, combined with attention to professional preparation, enables graduates to enter a variety of careers ranging from dietetics to child development or family and community services to positions in apparel merchandising and other consumer industries. Professional preparation is offered in five options as well as four minors that can enhance degrees in other majors and increase student employability. Integration of knowledge from root disciplines and incorporation of core concepts are the basis for all family and consumer sciences courses.

All students pursuing the Bachelor of Science in Family and Consumer Sciences degree are required to complete: a) University Studies requirements; b) a departmental core curriculum including a senior capstone course; and c) courses in one of the following individual options: dietetics, human nutrition and food, professional child development, family and community services, or

textiles and merchandising. Minors in apparel design, child and family studies, food and nutrition, and interior design are also available.

Grade Requirements

Students are required to pass all courses within the Department of Family and Consumer Sciences with a grade of C or better.

Security Screening

All majors in the Professional Child Development or Family and Community Services option are required to complete a security screening upon declaring their major. The student is responsible for the cost of this screening.

Family and Consumer Sciences Core Requirements

A core curriculum is required of all family and consumer sciences majors. This requirement is based on a common body of knowledge in family and consumer sciences which contains concepts relevant to all program areas (options). All students must take FCSC 1010 within their first year. FCSC 1010 is the key introductory course in family and consumer sciences. It is the beginning of our electronic portfolio student assessment system. Failure to complete this course within the required time frame could result in a student being dropped from the program.

The family and consumer sciences core consists of the following courses:

FCSC	1010	Perspect. in FCSC	2
FCSC	1140	Nutrition or	
FCSC	1141	Principles of Nutrition or	
FCSC	1150	Scientific Study of Food	2-3
FCSC	2121	Child Development or	
FCSC	2131	Family Relationships	3-4
FCSC	2170	Clothing in Modern Soc. or	
FCSC	2180	Housing or	
FCSC	3171	Intro. Textile Science.....	3
FCSC	4112	Family Decision Making or	
FCSC	3110	Personal Finance or	
FCSC	4113	Consumer Issues.....	3
FCSC	4010	Philosophical & Research Perspectives in FCSC	2
Total			15-17

Family and Consumer Sciences Options

Students must obtain and follow a check sheet for their chosen program area. Standards established by several professional organizations require completion of specific courses in addition to the family and consumer sciences core and USP requirements. All students are assigned a faculty adviser. Students must work closely with their adviser to be sure all requirements are met.

Dietetics

Students who complete the dietetics option meet academic requirements as approved by the Commission on Accreditation for Dietetics Education (CADE). Completion of this curriculum allows students to pursue a post-graduate

competitive internship to become eligible to take the examination for Registered Dietitians. The program is currently under developmental accreditation status.

**Indicates courses with prerequisites.

Required Courses

FCSC	1150	Scientific Study of Food	3
MATH	1400	**College Algebra	3
LIFE	1010	General Biology I.....	4
ENGL	1010	College Composition/ Rhetoric	3
COJO	1010	Public Speaking.....	3
FCSC	1141	Principles of Nutrition	3
CHEM	1020	**General Chemistry I	4
POLS	1000	American & Wyo Gov't	3
SOC	1000	Sociological Principles.....	3
CHEM	1030	**Gen. Chemistry II	4
MOLB	2021	**General Microbiology.....	4
ECON	1010	Prin. of Macroeconomics....	3
CHEM	2300	**Intro to Organic Chem. ...	4
PSYC	1000	General Psychology.....	4
ZOO	3115	**Human Systems.....	3
FCSC	3150	**Intermediate Foods	2
FCSC	3140	**Maternal, Infant and Adolescent Nutrition.....	3
FCSC	4142	**Nutrition & the Elderly.....	1
STAT	2050	**Fund. of Statistics.....	4
MOLB	3610	**Princ. of Biochemistry.....	4
FCSC	3147	**Community Nutrition.....	3
FCSC	4147	**Nutrtn & Weight Cntrl.....	3
ENGL	4010	**Tech. Writing in the Professions	3
MOLB	4100	**Clinical Biochemistry.....	3
FCSC	4145	**Adv Nutrition	4
MGT	3210	**Mgmt. & Organization.....	3
FCSC	3152	**Food Systems Prod.	3
FCSC	4146	**Therapeutic Nutrition	4
FCSC	4150	**Experimental Foods	3
FCSC	3153	**Food Serv. Mgmt.....	3

Human Nutrition and Food

Students who choose the human nutrition and food option will be prepared to pursue careers in food product development or a related field or to pursue graduate degrees.

**Indicates courses with prerequisites.

Required Courses

FCSC	1150	Scientific Study of Food	3
MATH	1400	**College Algebra	3
LIFE	1010	General Biology	4
FCSC	1141	Principles of Nutrition	3
ECON	1010	Principles of Macroecon.	3
CHEM	1020	**Gen. Chemistry I	4
CHEM	1030	**Gen. Chemistry II	4
COJO	1010	Public Speaking.....	3
PSYC	1000	General Psychology.....	3
SOC	1000	Sociological Principles.....	3
FCSC	3140	**Maternal, Infant, and Adolescent Nutrition.....	3
FCSC	4142	**Nutrition & the Elderly.....	1
CHEM	2300	**Intro Organic Chem.....	4
FCSC	4145	**Adv. Nutrition	4
FCSC	4146	**Therapeutic Nutrition	4
FCSC	4150	**Experimental Foods	3
Restricted Electives			27

Premedicine Career Track

Students who wish to pursue the premedicine career track will obtain the necessary coursework to apply to medical school. This track requires that specific substitutions and additions must be made to the general human nutrition and food curriculum.

Additional courses may be necessary as dictated by specific medical schools. See an adviser for these specific requirements.

Professional Child Development

The professional child development option prepares students for teaching and administrative positions in early childhood development and care; work in resource and referral agencies; Early Head Start home visitor positions; and child advocacy. It also provides a foundation for simultaneous completion of a birth-age five teaching certificate, for those students who apply to the endorsement program, or later completion of a teaching certificate in early childhood special education. This option is also available through distance delivery administered by the Outreach School.

**Indicates courses with prerequisites.

Required Courses

SOC	1000	Sociological Principles.....	3
PSYC	1000	General Psychology.....	3
EDEC	1020	Intro to Early Childhood Education	3
EDEC	3000	*Observing Young Children	3
EDEC	3220	*School Programs for Young Children or	3
FCSC	3128	Child Development Practicum or	3
EDCI	4320	*Oral and Written Language Acquisition	3
FCSC	2131	*Family Relations.....	3
FCSC	2110	Fundamentals of Aging and Human Development	3
FCSC	2121	*Child Development.....	4
FCSC	2133	**Intimate Relationships....	3
FCSC	3220	**Multicultural Influences on the Young Child.....	3
FCSC	3119	**Parent-Child Relations....	3
FCSC	4124	*Families of Young Children with Special Needs**	3
FCSC	4127	**Directing Preschool/ Daycare Programs.....	3
FCSC	4130	*Child Development Internship** or	6-8
FCSC	4131	Admin. Internship in Child Development	6-8
PSYC	4300	The Adolescent or	3
PSYC	3122	Adolescence.....	3
PSYC	4310	Behavior Disorders of Children	3

First Aid/CPR
Electives in Field

*These courses are required for the birth-five teaching endorsement.

Family and Community Services

The professional family and community services option has been approved by the National Council on Family Relations as a preparatory program for Certified Family Life Educators (CFLE). Students in this option work in a variety of community service and family support programs, particularly those with a prevention focus.

**Indicates courses with prerequisites.

Required Courses

COJO	1030	Interpersonal Comm.....	3
SOC	1000	Sociological Principles.....	3
PSYC	1000	General Psychology.....	3
FCSC	2110	Fundamentals of Aging and Human Development.....	3
FCSC	2121	**Child Development.....	4
FCSC	2131	**Family Relationships.....	3
FCSC	2133	**Intimate Relationships....	3
FCSC	3119	**Parent-Child Relations....	3
FCSC	4112	**Family Decisn Making....	3
FCSC	4117	**Working with Non-Profits and Boards or.....	3
POLS	4710	**Tp:Non-Profit Mgmt & ... Leadership.....	3
FCSC	4118	**Family Policy.....	3
FCSC	4124	**Families of Young Children with Special Needs.....	3
FCSC	4129	**Internship in Family & Community.....	6-8
FCSC	4138	**Family Stress & Coping ...	3
FCSC	4139	**Prof. Practices in FCS.....	3
CNSL	4520	Fund. of Counseling.....	3
PSYC	4300	The Adolescent or.....	3
FCSC	3122	Adolescence.....	3
SOC	1100	**Social Problems/Issues ...	3
SOC	4000	**Social Inequality.....	3
Electives in consultation with advisor			

Textiles and Merchandising

The objective of the textiles and merchandising option is to prepare professionals for careers in textiles, apparel, design, merchandising, and home-based small business ownership. Unlike most urban-oriented fashion merchandising or interior design curricula, this option emphasizes preparation for management or ownership of small apparel stores and other home-related businesses in Wyoming and rural areas of the west.

**Indicates courses with prerequisites.

Required Courses

FCSC	1180	Applied Design.....	3
FCSC	2170	**Clothing in Modern Society.....	3
FCSC	2180	Housing.....	3
FCSC	2188	**Interior Design I.....	3
FCSC	3170	Fabric Construction Techniques.....	4
FCSC	3171	Intro Textile Science.....	3
FCSC	3172	Intro Textile Science Lab.....	1
FCSC	3173	Visual Merchandising and Production.....	3
FCSC	4113	Consumer Issues or.....	3
MKT	4240	Consumer Behavior.....	3
FCSC	4171	**Adv. Textiles.....	3

FCSC	4174	**Foundations of Merchandising.....	3
FCSC	4175	**Textile Testing and Product Analysis.....	3
FCSC	4176	Historic Clothing.....	3
FCSC	4181	**Global Textile Marketplace.....	3
FCSC	4182	**Textile Industry and the Environment.....	3

Required Supporting Courses

Science Elective.....	3-4		
CHEM	1000	Intro. Chemistry or.....	4
CHEM	1020	General Chemistry I.....	4
PSYC	1000	General Psychology.....	3
COJO	1010	Public Speaking.....	3
AGRI	1010	Computers in Ag. or.....	2
COSC	1200	Computer Info. Systems.....	3
ECON	1010	Prin. of Macroecon. or.....	3
AGEC	1010	Prin. of Macroecon.....	3
SOC	1000	Sociological Principles.....	3
ACCT	1010	**Prin. of Accounting I.....	3
MKT	3210	**Intro to Marketing.....	3
MGT	3210	Management and Organization.....	3

Family and Consumer Sciences

Minors

Apparel Design

A minor in apparel design is sponsored jointly by the departments of Family and Consumer Sciences and Art. It is designed to enable students with career interests in this field to gain experience in the competency areas expected of apparel designers. This minor blends functional, artistic, and fashion considerations in the design of body coverings. Students interested in this minor should consult the sponsoring departments to receive an adviser for the minor.

Required Courses

FCSC	2175	Fashion Illustration.....	3
FCSC	3170	Fabric Construction Techniques.....	4
FCSC	3171	Intro Textile Science.....	3
FCSC	3174	Flat Pattern Design.....	3
FCSC	3175	Drafting & Draping.....	3
FCSC	4178/5178	Fiber Arts.....	3

One of the following:

FCSC	1180	Applied Design.....	3
ART	1120	Foundation: Three Dimension.....	3

One of the following:

FCSC	4171	Advanced Textiles.....	3
ART	1130	Foundation: Color Thry.....	3

One of the following:

FCSC	4176/5176	Historic Clothing.....	3
ART	2020	Art History II.....	3
Total			28

Child and Family Studies

A minor in child and family studies strengthens degrees in majors such as psychology, sociology, social work, health education, nursing, criminal justice (juvenile justice), communications, African-American Studies, American Indian Studies, or Chicano Studies. Faculty emphasize cross-cultural and global issues.

**Indicates courses with prerequisites.

Required Courses

FCSC	2121	**Child Development.....	4
FCSC	2131	**Family Relationships.....	3
FCSC	2133	**Intimate Relationships....	3

Elective Courses: Choose 12 credit hours. (9 credit hours must be 3000-level or above.)

FCSC	2110	**Fundamentals of Aging and Human Development... 3
FCSC	3110	**Personal Finance..... 2
FCSC	3119	**Parent Child Relationships..... 3
FCSC	3122	**Adolescence..... 3
FCSC	3128	**Practicum in Child Development..... 3
FCSC	3220	**Multicultural Influences on the Young Child..... 3
FCSC	4104	**Field Studies in Family and Consumer Sciences..... 3
FCSC	4112	**Family Decision Making . 3
FCSC	4113	**Consumer Issues..... 3
FCSC	4117	**Working with Non-Profits and Boards..... 3
FCSC	4124	**Families of Young Children with Special Needs..... 3
FCSC	4127	**Directing Preschool and Daycare Programs..... 3
FCSC	4118	**Family Policy..... 3
FCSC	4138	**Family Stress and Coping..... 3

Food and Nutrition

A minor in food and nutrition strengthens degrees in majors such as kinesiology and health, food science, nursing, and animal science. Students who minor in food and nutrition learn how food choices can influence their health and well-being. The course work provides the foundation for making positive life-style changes.

**Indicates courses with prerequisites.

Required Courses

FCSC	1140	Nutrition or.....	2
FCSC	1141	Principles of Nutrition.....	3
FCSC	1150	Scientific Study of Food.....	3

Total **5-6**

Select 12-13 additional credit hours from the following:

Nutrition Group

FCSC	3140	**Maternal, Infant and Adolescent Nutrition.....	3
FCSC	3145	Sports Nutrition and Metabolism.....	3
FCSC	3147	Community Nutrition	3
FCSC	4142	**Nutrition & the Elderly.....	1
FCSC	4145	**Adv. Nutrition	4
FCSC	4146	**Therapeutic Nutrition	4
FCSC	4147	**Nutrition & Weight Control.....	3

Food Group

FCSC	3150	**Intermediate Foods	2
FCSC	3152	**Food Systems Prod.	3
FCSC	4150	**Experimental Foods	3

Independent Study

FCSC	4106/5102	*Special Problems	3
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*Maximum of 3 hours

Total 18

Interior Design

A minor in interior design is sponsored jointly by the Departments of Family and Consumer Sciences and Civil and Architectural Engineering. It is designed to enable students with career interests in this field to gain experience in the competency areas expected of interior designers. Students who hope to use this minor to prepare for professional certification examination following graduation should consult the sponsoring departments to receive an adviser for the minor.

**Indicates courses with prerequisites.

Required Courses

FCSC	2188	**Interior Design I.....	3
ARE	2200	Building Materials & Construction Methods	3
FCSC	4188	**Interior Design II	3
FCSC	3171	**Intro Textile Science.....	3
FCSC	3172	Intro Textile Science Lab	1
ARE	2100	**Architectural Graphics....	3
ACCT	2010	**Prin. of Accounting I	3

Plus one of the following:

FCSC	1180	Applied Design	3
ART	1110	Foundation: Two Dimensional	3
ART	1120	Foundation: Three Dimensional	3
ARE	3600	Design I**	3

Plus one of the following:

ARE	3030	**Hist. of Architecture I	3
ART	2020	**Art History II	3

Total 25

Distance Degree and Certification

The department offers a distance degree option in professional child development as well as an early childhood director's certificate. An existing associate's degree is required for the degree option. Students who enroll in the degree or certificate program must complete a security screening upon declaring their option. Failure to do so will result in the student being dropped from the program.

A variety of methods are employed for delivery of these distance programs: online, audio-teleconference, and flexible enrollment. The diverse delivery of these programs is designed to reach a variety of learning styles.

Our distance degree programs has the same quality and requirements as on-campus programs. Completion of a distance degree requires 128 credit hours with a minimum of 30 credit hours from UW and at least 48 hours of upper division courses. All distance students are assigned an adviser to work with throughout their program. It is important for students to work closely with their adviser to be sure all requirements are met.

Professional Child Development

The distance delivery of the Professional Child Development option allows students who have an existing associates degree in child development or early childhood education to complete their bachelors degree in Family and Consumer Sciences. Place-bound students, many of whom currently work in early childhood programs, now have the opportunity to earn a UW bachelor's degree from their own hometown.

Admission to this program is competitive; an A.A. or A.S. in Child Development or Early Childhood Education is required. Applications are accepted through January each year. Students are notified of acceptance by March for spring advising and fall entry.

Courses also satisfy the requirements of the certificate for directors of early childhood programs for many states. In addition, they fit professional development for home providers and daycare professionals.

Those who would benefit from this program include: Head Start teachers and directors; home providers; directors of school-age child care programs; preschool program teachers, and teachers at developmental centers.

Early Childhood Program Director's Certificate

The Early Childhood Program Director's Certificate is available to early childhood professionals in the state as well as to students. Prior to the development of this program, Wyoming was one of the only states not to have such a certification. The certificate program is designed to:

- fit Wyoming's Professional Career Development Competency Wheel and the Professional Development Career Lattice,
- fit the National Association for the Education of Young Children's Guidelines for the Preparation of Early Childhood Professionals (1996),
- complement the definition of Quality Child Care developed by the governor's Council on Early Childhood Development,

- allow a variety of paths to certification, and
- fit the on-campus and distance delivery of the FCSC bachelor's degree.

Not only do these courses satisfy certification requirements for director of early childhood programs for many states but they also meet many of the requirements of a bachelor's degree in Family and Consumer Sciences. In addition, they also provide professional development for home providers and daycare professionals. For a complete list of required courses, contact the department office at 766-4145.

Those who would benefit from these courses include: Head Start teachers and directors; home providers; Department of Family Services, Adoption, and Social Service workers; public health nurses; school nurses; directors of school-age child care programs; preschool program teachers, and public school teachers.

Family and Consumer Sciences (FCSC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1010. Perspectives in Family and Consumer Sciences. 2. [(none)♦I, L] Provides experience in on-line education, as well as assessment and goal-setting to achieve expectations for professional competencies of family and consumer sciences professionals. Activities for the five career options and the integrative discipline of Family and Consumer Sciences (mission, history, core concepts). Students begin to develop their foundation portfolio. *Prerequisites:* declared FCSC major.

1140. Nutrition. 2. Relationship of food to maintenance of health and importance to the individual and society. Recommended for non-majors. (Normally offered fall semester)

1141. Principles of Nutrition. 3. Studies nutritional requirements as related to metabolism of nutrients in various physiological states. Designed for nutrition majors and interested non-majors. Students cannot receive credit for both FCSC 1140 and 1141. (Normally offered spring semester)

1150. Scientific Study of Food. 3. Comprehensive introduction to the study of food. Food science theories relative to composition are applied through the laboratory experiences. (Normally offered fall semester)

1170. Beginning Clothing Construction. 2. Beginning clothing construction for non-family and consumer sciences majors. (Normally offered fall semester)

1180. Applied Design. 3. [C3♦CA] Studies design philosophy. Emphasizes application of creativity to many areas of living. (Offered both semesters)

2050. Safety, Nutrition and Health in Early Childhood Programs. 2. Designed to enrich students' understanding of practices which support children's health development. Issues to be explored include record keeping related to child care health and safety, use of health consultants, accident and injury prevention, immunizations, nutrition and food safety in child care settings. (Offered alternate summers.)

2110. Fundamentals of Aging and Human Development. 3. [C2♦(none)] Discusses aging as a lifelong process, involving interrelationships of the individual and his or her environment. Includes future demographic trends, family health care, social policy and mass media. Cross listed with SOC 2120 and NURS 2110. (Offered fall semester)

2121. Child Development. 4. [C2♦CS] Incorporates classroom instruction with laboratory application of child development research and theory in physical, intellectual and social/emotional domains. Emphasizes early childhood years. *Prerequisite:* sophomore standing.

2122. Child Development Lab. 1. Laboratory observation course designed for students with a background in child development theory. Students learn child observation techniques, how to write laboratory reports, and how to apply them to evaluating a child's development in all domains. *Prerequisite:* PSYC 2300.

2131. Family Relations. 3. [C2♦(none)] Provides an overview of current research on family relations, family theory, and family dynamics across the lifespan. An ecological and family systems approach is used, with particular focus paid to the understanding of contextual influences on families. *Prerequisites:* COJO 1030 or EDEC 1020 or PSYC 1000 or SOC 1000, sophomore standing. (Normally offered spring semester; may also be offered summer based on sufficient demand and resources)

2133 [3133]. Intimate Relationships. 3. [C2♦(none)] Use of social science theory and research to understand psycho-socio-cultural influences in the development of personal and intimate relationships including human sexuality from development and interpersonal perspectives. Emphasizes application of current research and theory to facilitate positive individual growth, satisfaction, and stability in close relationships. *Prerequisites:* COJO 1030 or PSYC 1000 or SOC 1000; sophomore standing. (Offered at least once a year)

2135. Women and Aging. 3. [C2♦(none)] Focuses on women and the aging process with emphasis given to both the problems and promises of aging. Topics to be explored within a multicultural, sociological framework include the definition of self, relationships, community, health and health care, work and service, retirement, economic realities and new perspectives on aging. Cross listed with WMST/SOC/NURS 2135. *Prerequisites:* ENGL/SOC/WMST 1080 or SOC 1000 or FCSC/NURS/SOC 2120.

2170. Clothing in Modern Society. 3. [C2, W2♦WB] Aesthetic, physical economics and socio-psychological elements of clothing selection. (Normally offered fall semester)

2175. Fashion Illustration. 3. Introduces the fashion figure, light and dark contrasts, color, fabric and texture sketching techniques. Computer applications for layout of the design are also covered. *Prerequisites:* FCSC 1180 or ART 1110.

2180. Housing. 3. [C1♦(none)] Cross-cultural examination of evolution of contemporary housing, both as an artifact of material culture, and as the environmental setting which affect human development and interaction. *Prerequisite:* WA. (Normally offered fall semester)

2188. Interior Design I. 3. Beginning interior design course. Helps students use design principles to create workable designs for interior spaces. *Prerequisites:* FCSC 1180 and sophomore standing. (Normally offered spring semester)

3110. Personal Finance. 3. Acquaints students with personal budgeting and financial matters and relate these activities to financial institutions involved. *Prerequisite:* junior standing.

3119 [4119]. Parent-Child Relationships. 3. [C2♦(none)] Research and theory related to the processes of the parent-child relationship across the lifespan. Emphasizes developmental and family theory, contexts that influence parent-child relationships and application to professional practice. *Prerequisites:* one human development course; one human relationships course; junior standing. (Normally offered fall semester)

3122 [4122]. Adolescence. 3. [C2♦(none)] Studies biological, cognitive, and social/emotional development and adjustment within the adolescent and emerging adulthood years. Emphasis on the importance of theoretically grounded research and the integration of theory, research, and practice during adolescence. *Prerequisites:* one human development course; junior standing.

3128 [4128]. Practicum in Child Development. 3. Supervised experience in the child development laboratory. Emphasizes developing appropriate curriculum for preschoolers. *Prerequisite:* FCSC 2121, PSYC 2300. (Offered alternating spring semesters)

3140. Maternal, Infant and Adolescent Nutrition. 3. Addresses factors affecting dietary patterns and practices as well as nutritional requirements prior to and encompassing pregnancy and lactation and continuing through infancy and adolescence. *Prerequisites:* FCSC 1140 or 1141, LIFE 1010, ZOO 3115.

3145. Sports Nutrition and Metabolism. 3. Discusses roles played by carbohydrate, fat, protein, water, and key vitamins and minerals as they relate to physical exercise. Applies principles of nutrition. *Prerequisites:* FCSC 1140 or 1141; one semester of Chemistry; ZOO 3115 or KIN 3021.

3147. Community Nutrition. 3. Provides an introduction to the field of community nutrition and develops an appreciation of the importance of nutrition in community health programs at the local, state, and national level. Topics covered include the role of the community nutritionist; the identification of nutrition problems; grant writing, and program planning and evaluation. *Prerequisites:* FCSC 1141; SOC 1000 or 1100.

3150. Intermediate Foods. 2. Examines food management concepts which include selection and preparation of food to meet physical, psychological, and social needs of individuals and families. *Prerequisites:* FCSC 1150, FCSC major, sophomore standing. (Normally offered spring semester)

3152 [4152]. Food Systems Production. 3. Quantity food purchasing and production, along with institutional food services experience. *Prerequisites:* FCSC 3150 and LIFE 1010. (Normally offered fall semester)

3153 [4153]. Food Service Management. 3. Studies food service planning and layout, purchase and use of equipment, cost control, sanitation and safety, as well as purchase and preparation of food in quantity. *Prerequisites:* FCSC 3150, 3152, MGT 3210. (Normally offered spring semester)

3170. Fabric Construction Techniques. 4. Development of decision-making skills in selection, use and evaluation of materials and techniques for garment construction. Attention to the relationship of the home sewing industry to fashion merchandising. *Prerequisites:* FCSC 1170 or successful performance on construction competency test and FCSC 3171. (Normally offered spring semester)

3171 [2171]. Introductory Textile Science. 3. Understanding of textile fibers, their growth or manufacture, properties and their use and care; the major yarn manufacturing systems (cotton, worsted, woolen, and synthetic yarn texturing) and fabric manufacturing systems (weaving, knitting, and non-wovens). Introduces the physical/mechanical properties important in fibers, yarns and fabrics. *Prerequisite:* completion of University Studies SP requirement. (Normally offered fall semester)

3172. Textile Science Laboratory. 1. Introduces techniques in fiber, yarn and fabric identification. Examination of physical properties of textile materials. *Prerequisite:* Concurrent enrollment in FCSC 3171.

3173 [4173]. Visual Merchandising and Promotion. 3. Covers the principles of fashion, consumer behavior as it relates to promotion activities, and nonpersonal selling techniques to include advertising, display, publicity, fashion shows, and special events. Students will be involved in actual hands-on experiences with many techniques. *Prerequisite:* FCSC 2188. (Normally offered spring semester)

3174 [4170]. Flat Pattern Design. 3. Techniques of garment design using the flat pattern method are utilized to create three-dimensional designs. Computer applications to garment design are also covered. *Prerequisites:* FCSC 2175 and 3170. (Offered based on sufficient demand and resources)

3175. Drafting and Draping. 3. Principles and instructions for drafting pattern slopers through standard or individual measurements, and draping garment patterns through fabric manipulation, molding, and shaping to create three-dimensional form. *Prerequisite:* FCSC 3174.

3220. Multicultural Influences on the Young Child. 3. [C2, G1♦CS, D] Designed to enrich students' understanding of the cultural contexts of children's development from birth through age eight. Issues to be explored include cultural values, learning styles, children's acquisition of concepts of race and ethnicity, bilingualism and the theory of bicultural/bicognitive development. *Prerequisites:* FCSC 2121 or EDEC 1020; junior standing. (Offered fall semester)

4010. Philosophical and Research Perspectives in Family and Consumer Sciences. 2. [W3♦(none)] Enhancement of professional and personal development of students, development of skills for professional employment, as well as exposure to and development of research skills. *Prerequisites:* FCSC 1010 and senior standing in family and consumer sciences. (Offered fall semester)

4104. Field Studies in Family and Consumer Sciences. 1-3 (Max. 3). Concentrated on-site study of family and consumer sciences-related businesses, agencies and organizations to better understand challenges and potentials of various career opportunities in family and consumer sciences. Includes examples of business and agencies, such as Denver Merchandise Mart, Denver Fabric Mart, Wyoming Infants and Children's Program (WIC), Kansas City Fashion and Home Interiors Market and New York fashion-related industries. *Prerequisite:* junior standing. (Offered based on sufficient demand and resources)

4105. Family and Consumer Sciences Internship. 6-8 (Max. 8). Gives students experience in workplace related to selected family and consumer sciences options (i.e., retail store, social service agency and preschool or day care). *Prerequisites:* junior standing in family and consumer sciences and consent of instructor. (Offered all semesters)

4106. Special Problems in Family and Consumer Sciences. 1-3 (Max. 8). Provides advanced undergraduate students opportunities to pursue a topic of special interest in a selected family and consumer sciences area, under guidance of a department faculty member. *Prerequisites:* junior or senior standing and advanced consultation with department head and an instructor in subject matter area. (Offered all semesters)

4112. Family Decision-Making & Resource Management. 3. Utilizes theories to facilitate understanding of problem-solving and resource management in various family structures/contexts across the life span. Emphasizes internal family dynamics, global interdependence, critical thinking, cultural examination, ethical decision-making, and self-reflection. Designed to meet family studies requirement for license in marriage and family therapy at graduate level. Companion web site used. Dual listed with FCSC 5112. *Prerequisites:* FCSC 2131 or a psychology course or sociology course, junior standing. (Normally offered spring semester)

4113. Consumer Issues. 3. Provides research/applied understanding of consumer rights/responsibilities, government/business roles, legislation, advocacy, and redress. Emphasizes introductory consumer law/legal research, critical thinking, self-reflection, and cultural examination. Ethical theories and issues examined within an interdependent world. Meets requirements for certification in family and consumer sciences education. Internship opportunities possible upon successful completion. Companion web site used. *Prerequisite:* an economics, sociology, or psychology course; junior standing. (Normally offered spring semester)

4117. Working with Non-Profits and Boards. 3. Designed for students who will work for or with non-profits or other community services entities, including local, state or federal agencies. Students become familiar with board structures and functions, community needs assessments, regulations related to non-profit status, and strategies for inter-agency collaboration. *Prerequisites:* senior standing and satisfactory completion of a WB course.

4118. Family Policy. 3. Explores the relationships between family functioning and public/private policies. The roles of family professionals in advocacy and education regarding policies will be discussed. Attention will be paid to the policy process at the state level. Dual listed with FCSC 5118. *Prerequisites:* FCSC 2131; junior standing.

4124. Families of Young Children With Special Needs. 3. Deals with importance of including family in the process of early intervention with the preschool child with special needs. *Prerequisite:* junior/senior standing. (Normally offered fall semester)

4127. Directing Preschool and Daycare Programs. 3. [(none)♦WC] Effective methods for establishing and operating preschool and day-care programs for children under six years of age. Includes programming, classroom management, parent involvement and administration of food and nutrition programs. *Prerequisites:* FCSC 2121, EDEC 1020 or 3210; junior standing. (Normally offered fall semester)

4129. Internship in Family Life Education. 6-8 (Max. 8). Provides external field experience in a human services agency or family life agency, through agreements with local organizations. Normally taken in a student's last semester. Students must complete a minimum of 6 credit hours. *Prerequisites:* FCSC 4139 and 4116; 2.75 GPA in major.

4130. Internship in Child Development. 6-8 (Max. 8). Provides professional child development and early childhood education majors with an in-depth experience working with children from birth to age five. Students gain experience including planning lessons, teaching, assessing children and conducting parent conferences. *Prerequisites:* FCSC 2121; FCSC 4128 or EDEC 3210; junior status. (Offered all semesters)

4131. Administration Internship in Child Development. 6-8 (Max. 8). Provides professional child development and early education majors with an in-depth experience working with families and staff. Students gain experience in observing and assessing early childhood programs, planning and presenting staff trainings/professional workshops, staff supervision, writing newsletters, and other professional documents and professional activities. *Prerequisites:* senior standing, FCSC 2121, 4127, 4128 or an equivalent upper division course. (Offered all semesters)

4138. Family Stress and Coping. 3. [W3♦(none)] Theoretical and empirical research on family stress, coping and resiliency is emphasized as well as the study of normative stressors and crisis in the lives of individuals and families. Attention is paid to the application of theory and research to professional practice. Dual listed with FCSC 5138. *Prerequisites:* FCSC 2131 or 4119; senior standing. (Offered spring semester)

4139. Professional Practice Issues in Family and Community Services. 3. [(none)♦WC] Issues associated with prevention and education programs are examined. Particular attention is paid to the development of professional skills relevant to professionals who work with families in community, education and prevention settings. *Prerequisites:* FCSC 2131 and a WB course; majors only; senior standing. (Offered fall semester)

4142. Nutrition and the Elderly. 1. Studies nutrition requirements in elderly as affected by physiological changes with aging; covers special problems and food assistance programs for the elderly. *Prerequisites:* FCSC 1140 or 1141; LIFE 1010. (Normally offered fall semester)

4145. Advanced Nutrition. 4. Discusses functions of components of diet in human metabolism. Applies principles of nutrition. Dual listed with FCSC 5145. *Prerequisites:* FCSC 1140 or 1141; CHEM 2300; senior standing. (Normally offered fall semester)

4146. Therapeutic Nutrition. 4. [M3↔(none)] Rationale for dietary modifications in pathological conditions; experience in menu planning and diet instruction; as well as dietary and nutrient assessment of the sick individual with discussion of case studies. Dual listed with FCSC 5146. *Prerequisite:* FCSC 4145; senior standing. (Normally offered spring semester)

4147. Nutrition and Weight Control. 3. Advanced course in physiological and metabolic determinants of weight control emphasizing pathology, psychodynamics, assessment and treatment of obesity. Dual listed with FCSC 5147. *Prerequisites:* FCSC 1140 or 1141; FCSC 4145 or ZOO 2100. (Normally offered spring semester)

4150. Experimental Foods. 3. Studies physical and chemical properties of raw and processed food materials and tests for evaluation of food quality. Students develop ability to use and interpret recent research findings, as well as skills in planning, conducting and reporting food experiments. *Prerequisites:* FCSC 1150, CHEM 2300, STAT 2020, ENGL 4010, FCSC major. (Normally offered spring semester)

4171. Advanced Textiles. 3. Introduces color science as related to human perception and practical problems to the textile industry. Studies different types of dyes available, fibers to which they are applied and properties of dyes. Introduces various finishing techniques used for textiles. *Prerequisite:* CHEM 1000 and FCSC 3171. (Offered fall semester)

4174. Foundations of Merchandising. 3. [M3↔(none)] Offers a review of the fashion industry including types of fashion retail and the use of technology in retail sales. The primary focus of the course is merchandising math. Merchandising/retail principles and the formulas and calculations essential to the principles are also explored. *Prerequisites:* FCSC 3173 and QA. (Normally offered spring semester)

4175. Textile Testing and Product Analysis. 3. Explains meaning of quality control and why it is important. Discusses variety of laboratory tests and standards available to assess the various aspects of textile/apparel quality. Examines performance specifications of textile materials to determine if they are suitable for desired end uses. Dual listed with FCSC 5175. *Prerequisites:* FCSC 3170 and 4171.

4176. Historic Clothing. 3. Surveys history of clothing in the Western World. Includes information from approximately 3000 B.C. through the 20th century. Dual listed with FCSC 5176. *Prerequisite:* FCSC 2170. (Offered fall semester every other year)

4178. Fiber Arts. 3 (Max 6). Development and enhancement of technical and creative apparel construction/design skills culminating in the creation of a distinctive piece of wearable art. Dual listed with FCSC 5178. *Prerequisite:* FCSC 3174.

4181. Global Textiles Marketplace. 3. [G1↔G] Discusses global textile industry, how the U.S. fits into the global industry, textiles and apparel trade policy, as well as balancing conflicting interests in the world marketplace. *Prerequisite:* FCSC 3171. (Offered spring semester)

4182. Textile Industry and the Environment. 3. [W3↔WC] Examines the environment, the impact of the textile industry on the environment, and issues facing the textile industry to provide more environmentally friendly products. Dual listed with FCSC 5182. *Prerequisite:* completion of USP WB requirement, FCSC 3171.

4188. Interior Design II. 3. Advanced study of space planning and interior design. Dual listed with FCSC 5188. *Prerequisites:* FCSC 2180, 2188. (Offered every other year)

4350. Health Management Issues in Early Education. Provides the student the opportunity to examine the implications of a child's health status on his/her personal, educational, social and cognitive development. Provides personnel working closely with the young child with disabilities and his/her family an understanding of the issues related to health concerns and a framework on concerns specific to the child in a day care, preschool or other school setting. Cross listed with EDEC 4350 and NURS 4350. *Prerequisites:* junior or senior standing, 6 hours of education and/or the consent of instructor.

4546. Agriculture: Rooted in Diversity. 3. [(none)↔C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with ENGL/AAST/AIST/CHST/AGRI/AMST/HIST 4546. *Prerequisites:* Junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4960. Textiles Field Study Tour. 1-3 (Max. 6). Designed to provide students an opportunity to visit designer show rooms, textile manufacturers, museums, and historic/cultural sites. Serves both undergraduate and graduate students with an interest in textile and apparel design, history, and merchandising. *Prerequisites:* WA and consent of instructor. (Offered based on sufficient demand and resources every other spring/summer term, odd years)

4970. Textiles and Merchandising Internship. 6-8 (Max. 8). Provides practical experience in retail, interior design or apparel design settings. *Prerequisite:* FCSC 3173.

4985. Seminar: Development in Community Leadership. 2-3. Emphasizes basic core components of individual leadership: assessment of leadership skill and style; community-based experiences for understanding of community and resources; group community development projects for students; engagement with others and the community. Upon completion, students understand various leadership styles and philosophies and articulate their personal leadership philosophy. Dual listed with FCSC 5985. *Prerequisites:* senior or post-graduate equivalent status and consent of instructor.

Life Sciences Program

138 Aven Nelson Building, 766-4158

FAX: (307)766-2851

Web site: www.uwyo.edu/lifescience

Program Director: Mark E. Lyford

The Life Sciences Program consists of all LIFE prefix courses. These courses support the life science majors and several non-life science majors across campus. The number of LIFE courses taken by life science and other majors is determined by the departments that offer the majors. The curriculum intends to provide life-science majors with both breadth and depth in the basic life sciences, and non-science majors with exposure to key concepts in biology and an understanding of the connections between science and society. The program courses also expose students to the fields of cell and molecular biology, genetics, ecology, and evolution, and they familiarize students with the diversity of life on the planet. Courses within the curriculum address four fundamental goals at a level appropriate for each course: 1) Acquisition, Application and Synthesis of Knowledge, 2) Communication Skills, 3) Critical Thinking and Problem Solving, and 4) Research Skills.

For information on LIFE course offerings, please refer to the Life Sciences Program entry in the College of Arts and Sciences.

Microbiology Program

6012 Agriculture Building 766-6664

FAX: (307) 766-3875

E-mail: kmills@uwyo.edu

Program Director: Kenneth Mills

The bachelor of science degree program in microbiology is organized as an interdepartmental major involving the collaborative teaching, advising, and research expertise of more than 20 microbiology faculty from the Colleges of Agriculture, Arts and Sciences, and Health Sciences. The program is administered by a program director and a coordinating committee which represent each of the participating colleges. Students may obtain their degree in either the College of Agriculture or the College of Arts and Sciences. Students interested in obtaining their degree through the College of Arts and Sciences should refer to page 108 for additional information regarding college requirements. Students interested in obtaining their degree through the College of Agriculture should contact the program director or members of the coordinating committee directly for more information or formal academic advising within the program. Additional information about the microbiology program may be obtained at the following web site address: www.uwyo.edu/agcollege/micro/microhome.htm.

Students pursuing a major in microbiology must be advised by one of the following participating faculty. Members of the Interdepartmental Microbiology Coordinating Faculty are indicated by an asterisk (*).

*GERARD ANDREWS, veterinary sciences

*E. LEE BELDEN, veterinary sciences

*MARK GOMELSKY, molecular biology

*DALE D. ISAAK, molecular biology

KURT W. MILLER, molecular biology

*KENNETH W. MILLS, veterinary sciences

R. SCOTT SEVILLE, zoology/physiology

*PETER D. STAHL, renewable resources

DANIEL WALL, molecular biology

NAOMI L. WARD, molecular biology

MEIJUN ZHU, animal sciences

CHAOQUN YAO, veterinary sciences

Microbiology is the study of life forms too small to be observed without the aid of magnification; major groups of microbes include the bacteria, fungi (yeasts and molds), protozoa, and algae, as well as the viruses. In addition, related disciplines such as immunology and molecular biology are included because of their historical origins within microbiology.

As such, the science of microbiology is divided into numerous subspecialty areas that reflect not only the individual groups of microbes (e.g., bacteriology, virology, mycology, etc.), but also their significance in applied areas (e.g., medical microbiology/infectious diseases, microbial ecology, food microbiology, industrial microbiology, biotechnology, etc.) or in areas of basic science (e.g., molecular genetics). Throughout its history, microbiology has played a key role in the development of our understanding of basic biochemical and genetic processes, control of infectious diseases, production of increased and improved food supplies, and the production of numerous commercial products. With the development of molecular techniques to construct genetically engineered microbes, microbiologists will continue to make expanding contributions in these and other areas.

Because microbiology is a diverse science, individuals trained as microbiologists find exciting career opportunities in many areas of the basic and applied sciences. Typically, microbiologists are employed in five major sectors: private industry; clinical laboratories; government agencies; universities; and various other settings such as water treatment, food production/inspection facilities, and other public health-related areas. Recent manpower assessment studies at both the national and regional levels have provided evidence for a continuing and expanding need for microbiologists such that successful undergraduate students completing this program may look forward to exciting careers. In addition, undergraduates trained in the microbiological sciences are well prepared for competitive application to graduate school programs and professional programs in human or veterinary medicine, optometry or dentistry.

The microbiology curriculum is organized to provide students with the maximum flexibility in meeting their university studies program requirements. In addition, the curriculum is designed to prepare graduates for the future by combining a firm foundation in the basic sciences with a central core of microbiology classes, followed by the opportunity for students to specialize in areas of microbiology suiting their individual interests via the selection of electives. Prior to graduation, microbiology majors must complete the basic requirements and all microbiology core course requirements as listed below. Finally, to assure breadth of exposure in microbiology, students must complete 6 semester hours of microbiology electives.

Basic Course Requirements for Microbiology Majors

Total hours	128
3000-level or above credits (university requirement)	48

Completion of University Studies 2003 Program Requirements

Basic sciences and quantitative reasoning

MATH	1450 or 1400 and 1405 or 2200	4-6
STAT	2050 or 2070	4
LIFE	1010 and 2022 or 2023	8
LIFE	3050	4
CHEM	1020 and 1030	8
CHEM	2300 or 2420 and 2440	4-8
PHYS	1050 or 1110 and 1120	4-8
MOLB	3000	3
MOLB	3610 or 4600 and 4610	4-6

Microbiology Core Course Requirements

MICR/MOLB 2021 or 2240	4-5
PATB 2220	4
MOLB 4440	3
PATB/MOLB 4400	4
PATB 4710	3
MOLB 4460	3
MOLB 4170	1
MOLB 4250 or 4490	1
MICR Electives	6

Select two seminar courses from the following:
PATB 4150, MOLB 4050, LIFE 4985 (MOLB 4051, MOLB 4052 with adviser's approval)

Microbiology Electives

In addition to completing the required microbiology courses listed above, students must complete 6 hours of microbiology electives from the following lists.

Medical Microbiology

LIFE	3000	3
LIFE	4400	3
PATB	4001	3
PATB	4110	3
PATB	4120	3
PATB	4130	3
PATB	4140	3
PATB	4200	1
PATB	4220	2
PATB	4360	4
PATB	4500	3
PATB	5120	1-4
MOLB	4100	3
PHCY	4450	4
ZOO	4110	3

Molecular and Cell Biology

LIFE	3000	3
LIFE	3600	4
LIFE	4400	3
MOLB	4180	1
MOLB	4260	1
MOLB	4440	3
MOLB	4450	3
MOLB	4460	3
MOLB	4660/5660	3

Environmental and Applied Microbiology

LIFE	3000	.....	3
LIFE	4400	.....	3
BOT	4300	.....	4
BOT	4360	.....	3
BOT	5390	.....	3
SOIL	4140	.....	4
PLNT	3220	.....	3
PLNT	4000	.....	3
FDSC	4090	.....	3
FDSC	4100	.....	1
FDSC	4900	.....	3

***Students pursuing the B.S. degree in microbiology who wish to pursue a dual major in both microbiology and molecular biology must satisfy the basic science/math and core/elective requirements in microbiology as well as those specified for the B.S. degree in molecular biology PLUS an additional **9 credits of electives in microbiology and/or molecular biology at the 4000/5000 level**

Microbiology (MICR)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2021 [2210]. General Microbiology. 4. Introduces nature and diversity of microorganisms and their implications for all of biology. Covers comparative properties of eukaryotic and prokaryotic microbes, as well as their roles as disease agents, ecological agents and model systems for understanding of fundamental biological processes at the molecular level. Cross listed with MOLB 2021. *Prerequisites:* LIFE 1010, CHEM 1000 or equivalent.

2220. Pathogenic Microbiology. 4. Covers major communicable diseases of man caused by bacteria, mycoplasma. Discusses disease, diagnosis, treatment, prevention and transmission. Cross listed with PATB 2220. *Prerequisite:* MICR/MOLB 2210.

2240. Medical Microbiology. 5. Designed primarily for nursing and pre-pharmacy majors, introduces students to microbiology, including the diversity of prokaryotic and eukaryotic microbes, their structural and physiological properties, and their applied medical significance; also covers the basic principles of the immune system and emphasizes the communicable diseases of man caused by microbial pathogens. Cross listed with MOLB 2240. *Prerequisite:* LIFE 1010.

3000. Microbial Diversity and Molecular Phylogeny. 3. Surveys the microbial world from an evolutionary perspective. It is intended for students majoring in zoology, botany, microbiology, biology, molecular biology and related areas that

have an ecological emphasis. Cross listed with LIFE 3000. *Prerequisite:* LIFE 2020 or MOLB 2210 or MOLB/MICR 2240.

4001. Epidemiology (Diseases in Population). 3. Basic epidemiologic concepts and approaches to population problems in medicine, with examples from veterinary and human health. Covers a wide spectrum of topics and introduces practical applications of epidemiology. Cross listed with PATB 4001. *Prerequisites:* MICR 2240 or PATB 2220 and STAT 2050.

4090. Food Microbiology. 3. Discusses micro-organisms and theory of their growth and survival in relation to spoilage and preservation of foods and health hazards in foods. Cross listed with FDSC 4090. *Prerequisite:* MOLB 2210.

4100. Food Microbiology Lab. 1. Lab techniques used in food microbiology. Cross listed with FDSC 4100. *Prerequisite:* FDSC 4090 or 5090, taken concurrently.

4130. Mammalian Pathobiology. 3. Anatomical basis of disease in mammals. Emphasis on concepts of pathogenesis of disease, and the gross, microscopic and clinicopathological changes associated with lesions: cell injury and death; cellular degeneration; disturbances of growth and circulation; neoplasia; inflammation; and recognition of gross and microscopic tissue changes. Background in immunology will be beneficial. Dual listed with MICR 5130; cross listed with PATB 4130. *Prerequisite:* C or better in BIOL 2022.

4140. Soil Microbiology. 4. Fundamental principles of soil microbiology and how they relate to microbial ecology, environmental contamination, agriculture and forestry. Cross listed with SOIL/AECL 4140. *Prerequisite:* SOIL/AECL 2010. (Offered spring semester)

4200. Diagnostic Bacteriology. 1. Practical training with emphasis on diagnostic procedures used in a clinical microbiology laboratory. Students identify bacterial pathogens of animals and humans. Taught in a clinical setting utilizing selected clinical material. Techniques employed in the processing and identification of clinically significant bacteria are used and discussed. Safe laboratory practices for working with biohazards are presented. Cross listed with PATB 4200. *Prerequisites:* junior standing and a MICR course which included a laboratory.

4220. Molecular Mechanisms of Bacterial Pathogenesis. 3. Intended for students majoring in microbiology or a related field. The class will consist of lectures and small group decisions. Student responsibilities will include note-taking and preparation for discussion by completion of reading assignments consisting of classic and/or recent journal articles addressing the weekly topic. Cross listed with PATB 4220; dual listed with MICR 5220. *Prerequisites:* PATB/MICR 2220 and statistics (or epidemiology).

4360. Medical Entomology and Parasitology. 4. Emphasis on medically important arthropods, protozoa, and worms; clinical effects of infection epidemiology avoidance/control and identification/diagnosis. PATB/ENTO 4360. *Prerequisite:* 8 hours of biological science.

4440. Microbial Genetics. 3. Introduction to reading molecular genetics literature. Discusses historical background and current literature. Cross listed with MOLB 4440. *Prerequisite:* MOLB 2210, MOLB 3610 or 4610, LIFE 3050.

4460. Microbial Physiology. 3. Studies life processes of microbes as mediated by their structures acting in consort, in response to changing environments. Cross listed with MOLB 4460. *Prerequisites:* MOLB 2010/MICR 2010 and two semesters of biochemistry.

4490. Microbial Gene Expression. Provides theoretical background and hands-on experience in biochemical, spectroscopy, DNA microarray, and bioinformatics techniques used to study bacterial physiology. Measures and analyzes changes in physiological parameters as well as changes in patterns of gene expression in *Rhodobacter sphaeroides* in response to environmental conditions. Cross listed with MOLB 4490. *Prerequisites:* MOLB 4460/5460 or MICR 3000 plus MOLB 4610/5610 (the latter may be concurrent).

4500. Veterinary Entomology and Parasitology. 3. Biology, importance and control of arthropod, helminth and protozoan parasites of food and companion animals. Diagnosis and identification of live and preserved specimens. Cross listed with ENTO 4500. Cross listed with PATB/ENTO 4500. *Prerequisite:* 8 hours of biological science.

4510. Introductory Virology. 3. Prokaryotic and eukaryotic viruses as infectious agents and models for modern molecular biology. Examines concepts and principles of pathogenesis, host response and the regulation of virus-host interactions. Genome organization, structure and replication are examined within the context of the co-evolution of virus and host. Cross listed with MOLB 4510. *Prerequisites:* MOLB 3610 or MOLB 4600 plus MOLB 4610.

4710. Medical Virology. 3. Human and animal viruses as biological entities. Methods of study, classification, replication strategies, diagnostic approaches, epidemiology and significance as disease agents. Cross listed with PATB 4710. *Prerequisite:* MOLB 2220 or MOLB 2240.

Department of Molecular Biology

203 Animal Science/Molecular
Biology Bldg., 766-3300

6012 Agriculture Building, 766-2171

FAX: (307) 766-5098

Web site: www.uwyo.edu/MolecBio

Department Chair: Mark M. Stayton

Professors:

DALE D. ISAAK, B.S. Eastern Montana College 1970; M.S. Montana State University 1973; Ph.D. 1976; Professor of Molecular Biology 1994, 1985.

DONALD L. JARVIS, B.S. Idaho State University 1978; M.S. 1980; Ph.D. Baylor College of Medicine 1986; Professor of Molecular Biology 2000, 1998.

RANDOLPH V. LEWIS, B.S. California Institute of Technology 1972; M.S. University of California-San Diego 1974; Ph.D. 1978; Professor of Molecular Biology 1989, 1980.

KURT W. MILLER, B.S. Pennsylvania State University 1977; Ph.D. Boston University 1982; Professor of Molecular Biology 2007, 1992.

NANCY SUE PETERSEN, B.S. Harvey Mudd College 1965; M.A. Brandeis University 1968; Ph.D. University of California-Irvine 1972; Professor of Molecular Biology 1995, 1983.

DON ALLEN ROTH, B.S. University of New Hampshire 1974; M.S. Virginia Polytechnic Institute and State University 1975; Ph.D. 1978; Professor of Plant Pathology 1988, 1978.

PETER E. THORSNESS, B.A. Colorado College 1982; Ph.D. University of California-Berkeley 1987; Professor of Molecular Biology 2002, 1991.

JORDANKA ZLATANOVA, M.S. St. Petersburg University 1968; Ph.D. Institute of Molecular Biology, Bulgarian Academy of Sciences 1980; Dr.Sc. Institute of Genetics, Bulgarian Academy of Sciences 1989; Professor of Molecular Biology 2004.

Associate Professors:

DAVID FAY, B.S. Tufts University 1988; Ph.D. Yale University 1995; Associate Professor of Molecular Biology 2006, 2001.

MARK GOMELSKY, B.S. Moscow Institute of Chemical Technology 1986; M.S. 1988; Ph.D. Institute of Genetics and Selection of Industrial Microorganisms 1991; Associate Professor of Molecular Biology 2005, 1999.

PAMELA J. LANGER, B.S. Indiana University-Indiana 1973; Ph.D. Massachusetts Institute of Technology 1980; Associate Professor of Molecular Biology 1994, 1987.

MARK M. STAYTON, B.S. University of Missouri at Kansas City 1975; Ph.D. Iowa State University 1980; Associate Professor of Molecular Biology 1994, 1988.

ANNE W. SYLVESTER, B.S. University of Washington 1980; M.S. 1982; Ph.D. 1987; Associate Professor of Molecular Biology 2006.

Assistant Professors:

DAVID A. LIBERLES, B.A. Oberlin College 1991; M.S. California Institute of Technology 1995; Ph.D. 1997; Assistant Professor of Molecular Biology 2005.

DANIEL WALL, B.A. Sonoma State University 1988; Ph.D. University of Utah 1994; Assistant Professor of Molecular Biology 2007.

NAOMI WARD, B.Sc. (Hons.) University of Queensland 1993; Ph.D. University of Warwick 1997; Assistant Professor of Molecular Biology and Botany 2007.

CYNTHIA WEINIG, B.A. (Hons.) Brown University 1991; Ph.D. Indiana University; Assistant Professor of Botany and Molecular Biology 2007.

Modern biology is based on a fundamental understanding of molecular processes. Recent advances in molecular biology have led to an explosion of knowledge about gene expression and the role gene products play in cell function. Undergraduate programs in molecular biology offer learning opportunities at the forefront of modern biology.

The molecular biology degree programs are designed to prepare students for the future by combining a foundation in basic sciences and humanities with a broad selection of courses in molecular biology, biochemistry, genetics and microbiology. Advanced undergraduates attend an outside speaker's program that includes some of the world's best-known scientists. Modern, well-equipped teaching and research laboratories contribute significantly to the educational experience of a student. All junior- and senior-level undergraduates are encouraged to participate in research projects with individual faculty members. Involvement in an active research program provides the student with an additional dimension of learning beyond what is assimilated in courses. A student learns to plan experiments, solve technical problems and experience scientific advances first hand. An undergraduate research project also promotes close interaction between the undergraduate and graduate students, post-doctoral researchers, staff and faculty.

Many molecular biology majors continue their education beyond the bachelor's level by going to graduate school or to medical, dental or veterinary school. Some students choose to use their education to gain employment in biotechnology, clinical or basic research laboratories. Other career choices include teaching, medical technology, law and business.

To obtain a B.S. degree in molecular biology, a student, with the aid of a molecular biology adviser, designs a program of study that includes courses from the Molecular Biology Core Requirements and Electives listed below. Additional course lists are provided as an aid in developing

an individualized program of study in key Interest Areas such as Biochemistry, Cell and Molecular Genetics, Computational Molecular Biology, Microbiology, and Preprofessional studies (for those students planning careers in medically related fields). Courses listed under the Interest Areas are optional and the student and adviser will design a unique curriculum suited to the student's personal interests. Flexibility in course selection also permits students to fulfill the various requirements of postgraduate and professional schools. Completion of a degree in molecular biology provides a student with the tools needed to open the door to exciting futures in science, medicine, and agriculture.

Requirements for Molecular Biology Majors

1. Total credits (college requirement)..... 128
2. 3000-level or above 48
(university requirement)
3. 4000-level or above 33
4. Fulfillment of University Studies
Program (consult adviser)
5. Fulfillment of molecular biology core requirements

MOLB Core Requirements:		Hrs.
LIFE	1010	4
MICR/MOLB	2021	4
LIFE	2022 or 2023	4
LIFE	3050	3
CHEM	1020 and 1030	8
CHEM	2420 and 2440	8
MATH	2200*	4
MOLB	1010	1
MOLB	3000	3
MOLB	4050 and MOLB 4051 or 4052	2
MOLB	4170	1
MOLB	4180	1
MOLB	4250	1
MOLB	4600 and 4610	6
MOLB	electives#	10
PHYS	1110 and 1120	8
STAT	2050	4

*The alternative math courses (MATH 1400 and 1405 or 1450) may be substituted with adviser approval.

#MOLB electives are: MOLB 4100, 4260, 4300, 4400, 4440, 4450, 4460, 4490, 4495, 4510, 4600, 4850, 4990, 5010, 5520, 5650, and 5660.

Molecular biology elective limitations: the credit hours which may be applied toward the 10-credit MOLB elective requirement are limited as follows: MOLB 5010 and MOLB 5520 (3 credits total), MOLB 4850 (1 credit). Additional hours in MOLB 4050/4051/4052 (beyond the core requirement of 2 credits) may not be applied toward the 10-credit MOLB elective requirement. Additional credits in MOLB 4050, 4051, 4052, 4850, 5010 and 5520 may be applied to general university credits and 4000-level credits.

Molecular Biology Interest Areas

After discussing individual interests with a molecular biology adviser, a student should enroll in additional courses that will enhance preparation for a chosen career objective. Listed below are recommended courses that will further develop a student's skills and understanding in five Interest Areas. Courses noted with an asterisk can be applied toward the 10-credit hour MOLB elective requirement detailed in the previous section.

Biochemistry	Hrs.
CHEM 2230	4
CHEM 3550 or 4505 and 4506	3-6
COSC 1010 or 1100	3-4
*MOLB 4460	3
*MOLB 5010	6
*MOLB 5650	3

Cell and Molecular Genetics	Hrs.
LIFE 3600	3
*MOLB 4440	3
*MOLB 4450	3
*MOLB 5010	6
*MOLB 4660	3
ZOO 4340	3
ZOO 4670	4

Computational Molecular Biology	Hrs.
COSC 1010	4
COSC 1030	4
COSC 2030	4
IMGT 2400	3
IMGT 3400	3
*MOLB 5010	6
*MOLB 5650	3

Microbiology	Hrs.
MICR 2220	4
MICR 3000	3
*MOLB 4400	4
*MOLB 4440	3
*MOLB 4460	3
*MOLB 4490	1
*MOLB 5010	6

Preprofessional	Hrs.
LIFE 3600	3
PATB 2220	4
*MOLB 4100	3
*MOLB 4400	4
*MOLB 5010	3
PATB 4710	3
PHCY 4450	4
PSYC 1000	3
ZOO 2040 and 2041	3-4
ZOO 3115 and 3120	3-4

Recommended Course Sequence

The following course sequence is recommended for MOLB majors. In addition to these courses, electives should be selected each semester to fulfill university studies requirements and to enhance a student's educational background. Please note that since courses in microbiology and biochemistry are prerequisites for several advanced courses, the student should plan to take MOLB 2021 and 3000 in the sophomore year and MOLB 4600 and 4610 in the junior year.

FRESHMAN YEAR: Fall		Hrs.
LIFE 1010		4
CHEM 1020		4
ENGL 1010		4
MATH 2200		4
MOLB 1010		1

FRESHMAN YEAR: Spring		Hrs.
LIFE 2022		4
CHEM 1030		4
COJO 1010		3
STAT 2050		4
Electives		

SOPHOMORE YEAR: Fall		Hrs.
MICR/MOLB 2021		4
CHEM 2420		4
PHYS 1110		4
Electives		

SOPHOMORE YEAR: Spring		Hrs.
CHEM 2440		4
MOLB 3000		3
PHYS 1120		4
Electives		

JUNIOR YEAR: Fall		Hrs.
MOLB 4600		3
LIFE 3050		3
Electives		

JUNIOR YEAR: Spring		Hrs.
MOLB 4610		3
MOLB 4170		1
MOLB 4180		1
MOLB 4250		1
MOLB 4300		1
MOLB Electives		
Other Electives		

JUNIOR YEAR: Summer		Hrs.
(Optional)		
MOLB 4052		1
MOLB 5010		3

SENIOR YEAR: Fall		Hrs.
MOLB 4050 or 4051		1
MOLB 5010		3
MOLB Electives		
Other Electives		

SENIOR YEAR: Spring		Hrs.
MOLB 4050 or 4051		1
MOLB 5010		3
MOLB Electives		
Other Electives		

Molecular biology also has a graduate program leading to the Master of Science and Doctor of Philosophy degrees. Please see the *Graduate Bulletin*, or write or visit the Graduate Program Chairperson for additional information.

Basic Requirements for Undergraduate Minor in Molecular Biology

Students wishing to minor in molecular biology should discuss their plans with an adviser in the Department of Molecular Biology. Formal declaration of molecular biology as a minor requires 1) submission of a form that must be approved by the Department of Molecular Biology and the College of Agriculture Dean's Office, 2) appointment of a minor adviser from the Department of Molecular Biology.

To receive a minor in molecular biology, a student must complete courses listed in the following areas:

Science Foundation course requirements	Hrs.
LIFE 1010	4
LIFE 2022 or 2023	4
CHEM 1020 and 1030	8
CHEM 2420 and 2440 or 2300	4-8
MATH 1400 and 1405 or 1450	5-6

MOLB course requirements	Hrs.
MICR/MOLB 2021	4
MOLB 3000	3
Lab courses from MOLB 4170, 4180, 4250	
or 5010	3
MOLB 3610 and 8 additional MOLB credits or MOLB 4600 and 4610 and 6 additional MOLB credits (excluding MOLB 4050, 4051, 4052, 4850, 5010, and 5520	12

Note: A maximum of 8 out of the 22 credits applied to the MOLB course requirements can simultaneously be applied in fulfillment of the requirements for the student's major

Molecular Biology (MOLB)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M24QB]).

1010. Science and Society. 1. [(none)4I, L] Topics which involve the interface of molecular biology with societal issues, such as AIDS, genetic screening and recreational drugs, will be presented by faculty from the molecular biology department and other departments. After these presentations, students will discuss the issues in a debate format. Grading will be based on attendance as well as participation in discussions.

2021 [2210]. General Microbiology. 4. Introduces nature and diversity of microorganisms and their implication for all of biology. Covers comparative properties of eukaryotic and prokaryotic microbes, as well as their roles as disease agents, ecological agents, and model systems for understanding of fundamental biological processes at the molecular level. Cross listed with MICR 2021. *Prerequisites:* A grade of C or better in LIFE 1010 and CHEM 1000 or 1010.

2240. Medical Microbiology. 5. Designed primarily for nursing and pre-pharmacy majors. Introduces microbiology, including the diversity of prokaryotic and eukaryotic microbes, their structural and physiological properties, and their applied medical significance. Covers the basic principles of the immune system and emphasizes the communicable diseases of man caused by microbial pathogens. Cross listed with MICR/PATB 2240. *Prerequisites:* LIFE 1010.

3000. Introduction to Molecular Biology. 3. Designed for students interested in molecular mechanisms by which cellular processes are controlled in eukaryotic cells. Topics include molecular genetic techniques and genomics, structure of genes and chromosomes, transcriptional and translational control of gene expression, signal transduction pathways and gene regulation, the cell cycle, and abnormal regulatory processes in cancer. *Prerequisites:* MOLB/MICR 2021 or LIFE 2022 or 2023, and CHEM 2300 or 2420 or concurrent enrollment.

3610. Principles of Biochemistry. 4. A thorough study of biological systems chemistry from a physical and physical organic approach, for students without a background in physical chemistry. Biochemical systems of living organisms are examined in terms of basic chemical concepts. No credit if credit earned in MOLB 4600. Cross listed with CHEM 3610. *Prerequisites:* LIFE 1000 or 1010, and CHEM 2300 or 2440. (Normally offered fall and summer semesters)

4050. Student Seminar. 1 (Max. 4). Examines selected topics appearing in journal literature with oral presentation and discussion. Exposes undergraduates to current research in molecular biology. S/U only. *Prerequisite:* molecular biology course. (Offered both semesters)

4051 [4050]. Departmental Seminar. 1 (Max. 15). Required attendance at a series of weekly seminars presented by visiting faculty on a diverse set of research topics. Undergraduates are able to use one credit hour to partially fulfill the seminar requirement. S/U only. Dual listed with MOLB 5051.

4052. [4050]. Summer Seminar. 1 (Max. 5). Consists of one week of lectures, presented by a renowned scientist from either academics or industry. The material presented is taken from the research program of the speaker. S/U Only.

4100 [3980]. Clinical Biochemistry. 3. Discusses biochemical principles underlying human health and disease. Relates molecular mechanisms and the associated chemical and enzymatic alterations to normal and abnormal clinical conditions. *Prerequisite:* MOLB 3610 or 4610 concurrently. (Normally offered spring semester)

4170. Cloning and DNA Sequencing Laboratory. 1. Introduces cloning and DNA sequencing. Dual listed with MOLB 5170. *Prerequisite:* MOLB 3610 or 4600. (Offered spring semester)

4180. Protein Isolation and Characterization Laboratory. 1. Protein isolation using HPLC techniques followed by limited chemical characterization. Dual listed with MOLB 5180. *Prerequisite:* MOLB 3610 or 4600. (Offered variable semesters)

4250. Microbial Genetics Laboratory. 1. Provides hands-on laboratory experience in manipulating the genetics of virus, bacteria and fungi. Both classical and molecular genetic techniques will be used. Dual listed with MOLB 5250. *Prerequisites:* MOLB 2021, 3610 or 4600 or LIFE 3050. (Offered variable semesters)

4260. Quantitative Microscopy. 1. Acquaints students with principles of light microscopy, use of fluorescent probes and image processing software. Students use phase contrast, fluorescent, and confocal microscopes learning to measure and compare size and intensity of images. Dual listed with MOLB 5260. *Prerequisites:* MOLB 4600 or LIFE 3600, and PHYS 1120.

4300. Writing in Molecular Biology. 1. [W3♦WC] Writing based on experiments done in the molecular biology lab pods. Assignments include proposals, journal articles, non-technical articles, reports and press releases. Required concurrent enrollment in three spring molecular biology lab pods: MOLB 4170, 4180 and 4250. *Prerequisites:* completed or concurrent enrollment in MOLB 3610 or 4600.

4400. Immunology. 4. Biology of immune system; cellular and molecular mechanisms; host resistance to infectious agents; as well as hypersensitivities, autoimmunity, tumor and tissue rejection. Includes laboratory for immunological techniques. Cross listed with PATB 4400. Dual listed with MOLB 5400. *Prerequisite:* PATB 2220. (Normally offered fall semester)

4440. Microbial Genetics. 3. Introduction to reading molecular genetics literature. Discusses historical background and current literature. Dual listed with MOLB 5440; Cross listed with MICR 4440. *Prerequisites:* MOLB 2021, 3610 or 4610, LIFE 3050. (Normally offered fall semester)

4450. Cell and Developmental Genetics. 3. Integrates the genetic control of cell regulation and animal development in both vertebrate and invertebrate model systems such as *Drosophila*, *C. elegans* and the mouse. Includes studies of eukaryotic signal transduction, gene control, and current transgenic technologies. *Prerequisites:* MOLB 4600 and 4610 or concurrent enrollment; or MOLB 3000 and 3610.

4460. Microbial Physiology and Metabolism. 3. Studies life processes of microbes as mediated by their structures acting in consort, in response to changing environments. Dual listed with MOLB 5460. *Prerequisites:* MOLB 2021 and 3610 or 4610. (Normally offered fall semester)

4485. Computers in Biology. 1. Prepares students to use existing internet resources as research tools in biology without the need to write or install software. Topics include literature searching, multiple sequence alignment and phylogenetic tree construction, primer design, protein homology modeling, and the use of model organism databases. Dual listed with MOLB 5485. *Prerequisites:* MOLB 3000, 3610, or 4610 or LIFE 3600.

4490. Microbial Gene Expression Laboratory. 1. Provides theoretical background and hands-on experience in biochemical, spectroscopy, DNA microarray, and bioinformatics techniques used to study bacterial physiology. Measures and analyzes changes in physiological parameters as well as changes in patterns of gene expression in *Rhodobacter r sphaeroides* in response to environmental conditions. Dual listed with MOLB 5490. *Prerequisites:* MOLB 4460/5460 or MICR 3000 plus MOLB 4610/5610 (the latter may be concurrent).

4495. Bioinformatics. 3. Course topics range from classic algorithms in bioinformatics like multiple sequence alignment and phylogenetic tree construction to problems of functional analysis, including computational genomics, gene expression, protein structure, and systems biology analyses. Dual listed with MOLB 5495. *Prerequisite:* MOLB 3000 or 3610 or 4610 (MOLB 3610 and 4610 may be taken concurrently with MOLB 4495).

4510. Introductory Virology. 3. Prokaryotic and eukaryotic viruses as infectious agents and models for modern molecular biology. Examines concepts and principles of pathogenesis, host response and the regulation of virus-host interactions. Genome organization, structure and replication will be examined within the context of the co-evolution of virus and host. Cross listed with PATB 4510. *Prerequisites:* MOLB 3610 or 4600 plus 4610.

4600. General Biochemistry I. 3. First course of comprehensive two-semester sequence for all biological and physical science majors. Students wishing to acquire laboratory experience in biochemistry should enroll in MOLB laboratory pods. Dual listed with MOLB 5600. *Prerequisite:* CHEM 2300 or 2440. (Normally offered fall semester)

4610. General Biochemistry II. 3. Second course of comprehensive two-semester series for molecular biology majors. Dual listed with MOLB 5610. *Prerequisite:* MOLB 4600. (Normally offered spring semester)

4660. Maintenance and Flow of Genetic Information: A Molecular Perspective. 3. Current research in the maintenance and flow of genetic information- replication, recombination, repair, transcription, and translation – is discussed. Students are exposed to new knowledge of DNA and protein structure and function, organization of the genome, gene expression, and principles of contemporary experimental methods. Dual listed with MOLB 5660. *Prerequisite:* MOLB 3000 or 4610.

4850. Undergraduate Teaching Internship. 1 (Max. 3). Supervised participation of undergraduates in the teaching of courses offered by the molecular biology department. S/U Only. *Prerequisites:* junior standing and consent of supervising instructor.

4990 Topics In: 1-3 (Max. 10). Lectures, literature reviews and discussion of selected current topics in different areas of molecular biology. Please check class schedule for current offerings each semester. *Prerequisites:* MOLB 3610 or 4610.

Department of Plant Sciences

50 Agriculture Building, 766-3103

FAX: (307) 766-5549

Web site: www.uwyo.edu/uwplant

Department Head: Stephen K. Herbert

Professors:

ROLLIN H. ABERNETHY, B.S. Kansas State University 1970; M.S. 1970; Ph.D. University of Arizona 1974; Professor of Plant Science 1989, 1978; Associate Vice President, Academic Affairs 1999.

GARY D. FRANC, B.S. University of Wisconsin 1978; M.S. University of Minnesota 1982; Ph.D. Colorado State University 1988; Professor of Plant Pathology 2002, 1991.

JAMES M. KRALL, B.S. Montana State University 1973; M.S. Kansas State University 1975; Ph.D. University of Wyoming 1979; Extension Agronomist and Professor of Agronomy 1997, 1984.

STEPHEN D. MILLER, B.S. Colorado State University 1968; M.S. North Dakota State University 1970; Ph.D. 1973; Professor of Weed Science 1984; Assoc. Dean and Director of Agricultural Experiment Station, 2005.

Associate Professors:

ROBIN W. GROOSE, B.S. University of Wisconsin 1978; M.S. 1983; Ph.D. 1985; Associate Professor of Plant Genetics 1993, 1987.

STEPHEN K. HERBERT, B.S. Seattle Pacific University 1980; Ph.D. University of Washington 1988; Associate Professor of Botany 1999.

Assistant Professors:

M. ANOWARUL ISLAM, B.S. Bangladesh Agricultural University 1990; M.S. Institute of Postgraduate Studies in Agriculture, Bangladesh 1996; Ph.D. University of Sydney, Australia 2003; Assistant Professor of Forage Agroecology 2008.

ANDREW R. KNISS, B.S. University of Wyoming 2001; M.S. University of Nebraska-Lincoln 2003; Ph.D. University of Wyoming 2006; Assistant Professor of Weed Ecology 2007.

RICHARD (RIK) D. SMITH, B.S. Western Washington University 1990; Ph.D. University of California-Davis 2003; Assistant Professor of Agroecology 2004.

Academic Professionals:

JACK CECIL, B.S. University of Wyoming 1974; M.S. 1978; Assistant Research Scientist 1993.

MARK FERRELL, B.S. University of Wyoming 1976; M.S. 1980; Ph.D. 1984; Extension Pesticide Coordinator 1983.

ABDEL MESBAH, B.S. National Institute of Agriculture, Morocco 1982; M.S. University of Wyoming 1990; Ph.D. 1993; Research Scientist 1997.

KAREN PANTER, B.S. Colorado State University 1979; M.S. University of Nebraska 1981; Ph.D. Colorado State University 1985; Extension Horticulture Specialist 1998.

RAINA SPENCE, B.A. Central Washington University 1999; M.S. Washington State University 2002; University Extension Educator, Assistant 2007.

DAVID WILSON, B.S. Montana State University 1978; M.S. University of Wyoming 1993; Ph.D. 2000; Senior Lecturer 2007, 1993.

Adjunct Professors:

Terry Booth, Stephen Enloe, Linda Hanson, Drew Lyon, Lee Panella, Dale Shaner, Robert Wilson, Dale Woods

Professors Emeriti:

Ron Delaney, David Koch, Thomas D. Whitson, Alan Gray, Fred Gray

The Department of Plant Sciences offers two programs leading to a Bachelor of Science degree and three minors programs. The Bachelor of Science programs include agroecology (an interdepartmental program offered through the Department of Plant Sciences and the Department of Renewable Resources) and agroecology/environment and natural resources (an interdisciplinary program offered through the Departments of Plant Sciences, Renewable Resources, and the School of Environment and Natural Resources). The minors program in plant protection includes the disciplines of agronomy, plant genetics, plant pathology and weed science. The minors program in horticulture encompasses landscape design, plant materials and their propagation, organic food production, turfgrass science, and greenhouse design and management. These minors

allow students within many bachelors programs to obtain an added emphasis in an area(s) which enjoys strong employment opportunities.

Agroecology Program
Rooms 50/2013 Agriculture Building
Phone: (307) 766-3103/766-2263

Departments of Plant Sciences and Renewable Resources

The Bachelor of Science degree program in agroecology is an interdepartmental major involving the collaborative teaching, advising and research expertise in the Departments of Plant Sciences and Renewable Resources. An agroecology minor is also available.

Professors:

Rollin H. Abernethy, plant sciences
Gary D. Franc, plant sciences
Angela L. Hild, renewable resources
James M. Krall, plant sciences
David E. Legg, renewable resources
Stephen D. Miller, plant sciences
Larry C. Munn, renewable resources
K.J. Reddy, renewable resources
Scott R. Shaw, renewable resources
Michael A. Smith, renewable resources
Thomas L. Thurow, renewable resources
George F. Vance, renewable resources
James K. Wangberg, renewable resources
Stephen E. Williams, renewable resources

Associate Professors:

Timothy Collier, renewable resources
Robin W. Groose, plant sciences
Stephen K. Herbert, plant sciences
Scott Miller, renewable resources
Daniel J. Rodgers, renewable resources
Peter D. Stahl, renewable resources
James W. Waggoner, renewable resources
Dave Williams, renewable resources

Assistant Professors:

Anowarul Islam, plant sciences
Andrew R. Kniss, plant sciences
Richard D. Smith, plant sciences

Academic Professionals:

Jack Cecil, plant sciences
Mark Ferrell, plant sciences
Abdel Mesbah, plant sciences
Karen Panter, plant sciences
Raina Spence, plant sciences
David Wilson, plant sciences

Agroecology Major

A B.S. degree in agroecology, the study of sustainable agricultural ecosystems, prepares students for various careers in agriculture, natural resources, environmental and life sciences and for advanced graduate studies in specific subdisciplines within these areas. It is a broad, interdisciplinary, undergraduate curriculum that combines and integrates courses in the crop, horticulture, disease, soil and insect sciences and is

supported by a sound science based curriculum and general education. Flexibility is built into the agroecology curriculum to readily accommodate students seeking to pursue an emphasis or obtain a minor in a specific discipline and thereby balance the breadth of the curriculum with greater depth in such areas as biology, chemistry, crop science, entomology, environmental studies, natural resource management, soil science, plant pathology, weed science, horticulture, turf management, preveterinary medicine, rangeland ecology and watershed management, animal science, microbiology and molecular biology. A liberal number of electives permits design of a program that best meets individual career and educational objectives. The agroecology program is well suited for students of urban or rural backgrounds who possess an aptitude for science and interest in agriculture, the environment, life sciences or natural resources.

The agroecology core curriculum is comprised of freshman through senior level courses which, like an ecological web, illustrate dynamic and complex interactions of plants, soils, and plant pests (diseases, insects, weeds) with the environment. Academic training is enhanced with experiential learning through research apprenticeships, internships, field studies, and special agroecology capstone courses. Special emphasis is given to development of critical thinking and communication skills, problem solving and application of science. It is a richly interdisciplinary program to prepare productive citizens for "real world" situations and life-long learning.

Agroecology B.S. degree recipients are prepared for careers with private and public institutions and agencies in such areas as: agricultural consulting, production or sales, research, product development, education, extension education, international programs, and scientific and technological support; and with professional titles such as: soil scientist, conservationist, entomologist, consultant, plant scientist, integrated pest management specialist, ecologist, research associate or technician, agronomist, biotechnician, and agroecologist. Degree recipients are also prepared for graduate education in biological and environmental sciences.

Course Requirements for Agroecology Majors

	Hrs.
Agroecology	26
AECL 1000, 2010, 3030, 4140, 4990 and 4 hrs from either or a combination of AECL 4920, 4930 or 4960	
Supporting Science	
Supporting Science Biology/Genetics	21-22
ENTO 1000 or 1001 or REWM 3020 or ANSC 1010, and AGEC 1010 or 1020 and LIFE 1010, 2023, 3400, and CHEM 1000, 2300	
Math/Statistics	7
MATH 1000 or 1400, STAT 2050	
Communications	3
COJO 1010	
Agriculture Science Electives	9

Select 9 hours upper division from one of the following: animal science, botany, crop science/horticulture/plant pathology (PLNT), entomology, microbiology/molecular biology, pest science, rangeland ecology and watershed management, or soil science.	
Supporting Electives	9
Select 9 hours upper division from any of the following: agroecology, agricultural economics, animal science, biology, botany, chemistry, communications, crop science/horticulture, environment and natural resources, entomology, food science, geography and recreation, microbiology, molecular biology, rangeland ecology and watershed management, pathobiology, plant pathology, soil science or zoology.	
Additional University Studies	14-23
Electives	22-31
Total	120

Agroecology/Environment and Natural Resources Program

(ENR, Plant Sciences, and Renewable Resources)

Students with an especially strong interest in the environment and natural resources may choose to pursue the B.S. in agroecology/ENR. This degree is offered in conjunction with the School of Environment and Natural Resources. See the ENR Information and Advising Guide for details.

Agroecology Minor

(Plant Sciences & Renewable Resources)

Minimum requirements20-21
 AECL 1000; two of the following: AECL/SOIL 2010, LIFE 2023, AECL 3030, and 9 additional upper division hours from the following: ENTO, PLNT, and/or SOIL

Agricultural Entomology Minor

(Renewable Resources)

Minimum requirements 11
 From the following: ENTO 1000 or 1001; 4682, 4685, or AECL 3030; ENTO 4360 or 4500 or 4665.

Plant Protection Minor

(Plant Sciences)

Minimum requirements17
 AECL 1000, AECL 3030, and 10 additional hours from the following: PLNT 3220, 4000, 4070, and 4120.

Horticultural Minor

(Plant Sciences)

Minimum requirements16
 PLNT 2025 and 2026, and 12 additional hours from the following: PLNT 3300, 3400, 4120, 4140, 4150, 4160, 4180, 4200, 4975.

Insect Biology Minor

(Renewable Resources)

Minimum requirements13
 From the following: ENTO 1000 or 1001; ENTO 4360, 4500, 4665, 4678, 4682, 4684, 4685, 4686, 4687, 4360, 4884, 5601 or 5602, and RNEW 3000.

Soil Science Minor

(Renewable Resources)

Minimum requirements18
 From the following: SOIL/AECL 2010, plus 11 credits of upper-division soil sciences courses.

Agroecology (AECL)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000 [CROP/BOT 2000]. Agroecology. 4. [S1↔SB, G] Introduces ecological interactions that affect food producing (agricultural) systems. Lectures and laboratory exercises study the various biological components and the science of sustainable agricultural production. Features differences between developed and developing countries. Explores crises and challenges facing agriculture and global society.

2010 [SOIL 2100]. Introduction to Soil Science. 4. [S3↔SE] Introduces soil ecological processes and management in terrestrial environments. Discusses interaction of soil, biological, chemical, morphological, and physical properties with land management in wildland and agricultural ecosystems. Emphasis of the course is on plant response to soil conditions. Cross listed with SOIL 2010. *Prerequisite:* 4 hours of chemistry. (Offered spring semester)

2025. Horticultural Science. 3. [(none)↔SB] Propagation, growth, development and utilization of horticultural plants. Students gain an understanding of plant classification, anatomy, interactions with the environment, production and utilization. Taught on-line only through Outreach. Cross listed with PLNT 2025. *Prerequisites:* AECL 1000 or LIFE 1010. (Offered fall semester)

2026. Horticultural Sciences Laboratory. 1. [(none)↔SB] Offers hands-on experience in many areas of horticulture. Students learn basic horticultural plant structures and functions, propagation methods, growing media and fertilizers, landscaping, pruning, etc. Cross listed with PLNT 2026. *Prerequisites:* AECL 1000 or LIFE 1010. (Offered fall semester)

3030 [2030]. Ecological Web: Ecology of Plant Protection. 3. Introduces students to concurrent evolution of crop cultivation and organisms, both plant and animal, that attack them. Provides basic skills necessary to understand ecology and management of economic crop pests. *Prerequisites:* LIFE 1010 and AECL 1000. (Offered fall semester)

4120. Organic Food Production. 3. A complete review of the federal organic production guidelines, methods and applications for organic production facilities, alternative marketing principles, concepts of organic fertilizer use, organic pest control and concepts for using environmentally friendly methods to reduce chemical, petroleum and synthetic inputs for more sustainable crop and livestock agricultural systems. *Prerequisite:* 8 hours of BIOL and/or CHEM. (Normally offered fall semester of odd-numbered years.)

4130. Applied Remote Sensing for Agricultural Management. 3. Addresses specific applications of remote sensing to cropland and rangeland management. Provides an overview of remote sensing, specific applications for crops, shrubs and range vegetation. The course foundation will be agriculture-specific remote sensing of green plants. Cross listed with RNEW/BOT 4130. *Prerequisites:* QA course and 9 credit hours in student's major field and junior/senior standing.

4140. Soil Microbiology. 4. Fundamental principles of soil microbiology and how they relate to microbial ecology, environmental contamination, agriculture and forestry. Cross listed with SOIL/MICR 4140. *Prerequisite:* SOIL/AECL 2010. (Offered spring semester)

4920 [CROP 4600]. Topics in Agroecology: Research Apprenticeship. 1-2 (Max. 4). Laboratory and/or field research apprenticeship. Emphasizes individual student-faculty interactions on current topics in agroecology. *Prerequisite:* AECL core courses.

4930 [CROP/ENTO/SOIL 4903]. Internship in Agroecology. 1-3 (Max. 6). Provides students with realistic views of crop science, entomology or soil science through practical, as well as work-related, experiences. Provides positive educational experience to supplement formal academic course work. *Prerequisites:* sophomore standing or higher; 2.5 GPA.

4960 [PLPA 4000]. Agroecology Field Studies. 2. Various facets of the agroecosystem are covered by visits to agricultural research stations, agri-businesses, private farms, national monuments, historical sites and Federal Parks. Students are exposed to ongoing sustainable research projects and innovative sustainable farming operations where a variety of cropping systems are utilized. Students are usually exposed to archaeological remains of ancient American Indian farming systems. An 8 day trip. *Prerequisite:* AECL 1000. (Normally offered first week after commencement of odd-numbered years)

4990. Agroecology Seminar. 3. [W3♦WC] Capstone agroecology course for final integration of agroecology courses (AECL 2010, 3030, and LIFE 2023). Provides overall synthesis of these academic subjects following completion of a prescribed senior experience courses (AECL 4920 or 4930). (Offered spring semester)

Plant Sciences (PLNT)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1150 [CROP 1150]. Pesticide Safety and Application. 1. Introduces various types and safe methods of pesticides application. Subsequent to completion, students may take the certification test administered by the Wyoming Department of Agriculture. Cross listed with ENTO 1150. Offered S/U only. (Normally offered during finals week of the fall semester)

2025. Horticultural Science. 3. [(none)♦SB] Propagation, growth, development and utilization of horticultural plants. Students gain an understanding of plant classification, anatomy, interactions with the environment, production and utilization. Taught on-line only through Outreach. Cross listed with AECL 2025. *Prerequisites:* AECL 1000 or LIFE 1010.

2026. Horticultural Sciences Laboratory. 1. [(none)♦SB] Offers hands-on experience in many areas of horticulture. Students learn basic horticultural plant structures and functions, propagation methods, growing media and fertilizers, landscaping, pruning, etc. Cross listed with AECL 2026. *Prerequisites:* AECL 1000 or LIFE 1010. (Offered fall semester)

2300. Irrigation Principles. 3. Studies basic soil-water relationships, evapotranspiration, water quality criteria, efficiencies, plant response and management, as they apply to irrigation of agricultural lands. Cross listed with SOIL 2300. *Prerequisite:* MATH 1400.

3200 [CROP 2200, 3200]. Forage Crop Science. 3. Major aspects of forage crop production and biology. Cultural practices, adaptation, sustainable agriculture use, seed production, harvest, livestock utilization and storage of forages. Emphasizes characteristics of important grasses and legumes. *Prerequisite:* AECL 1000 or LIFE 1000. (Offered fall semester)

3220 [PLPA 3220]. Plant Pathology. 3. Study of plant diseases, their causes, nature and control, as well as pathogen biology. Study of diseases caused by fungi, bacteria, viruses, nematodes, mycoplasma-like organisms, higher plants and abiotic factors on field and vegetable crops, as well as on landscape plants. Gives students insight into the impact plant diseases have on humans. *Prerequisite:* AECL 1000 or LIFE 1010. (Offered fall semester of odd-numbered years)

3300. Horticultural Plant Propagation. 3. Emphasis on sexual and asexual propagation of various plants including herbaceous and woody crops. Seed propagation discussions include anatomy, physiology, dormancy, and enhancing seed viability and germination. Asexual propagation discussions center on anatomy and physiology of cuttings, adventitious root formation, budding, grafting, and tissue culture. *Prerequisite:* AECL or PLNT 2025. (Normally offered spring semester of even-numbered years)

3400. Horticultural Plant Materials. 3. Examines horticultural tree, shrub, vine, and ground cover varieties, cultivars and native species of horticultural use. It includes herbaceous, woody, deciduous, evergreen, annual, biennial and perennial species. Common and specific names as well as pertinent facts on each species are correlated to field identification. *Prerequisite:* AECL/PLNT 2025 or LIFE 2023. (Offered fall semester of even-numbered years)

4000 [PLPA 4000]. Plant Disease Control. 3. Advanced study of plant diseases. Important diseases of field, forage and horticultural crops will be studied. Includes history and current distribution and uses of crops. Emphasis will be placed on pathogen biology and development of integrated disease management. Current and classic research papers on plant disease control will be discussed. Dual listed with PLNT 5000. *Prerequisite:* PLNT 3220. (Normally offered fall semester of even-numbered years)

4020. Sustainable Agriculture. 3. Focuses on the sustainability of agroecosystems and the human communities that maintain them in the context of regional, national, and global food and fiber requirements. Topics include the scale of agriculture, low-input systems, current energy and transportation challenges, markets, and integrated crop and livestock production. Dual listed with PLNT 5020. *Prerequisite:* 8 hours of biology. (Offered spring semester of even-numbered years)

4070 [CROP 4070]. Weed Science and Technology. 4. Management and physiological principles involved in control of economically important farm and range weeds. Dual listed with PLNT 5070. *Prerequisite:* AECL 1000, LIFE 1010. (Normally offered fall semester)

4120. Organic Food Production. 3. A complete review of the federal organic production guidelines, methods and applications for organic production facilities, alternative marketing principles, concepts of organic fertilizer use, organic pest control and concepts for using environmentally friendly methods to reduce chemical, petroleum and synthetic inputs for more sustainable crop and livestock agricultural systems. Cross listed with AECL 4120. *Prerequisite:* 8 hours of BIOL and/or CHEM. (Normally offered fall semester of odd-numbered years)

4140. Turfgrass Science. 3. Turfgrass management practices from a plant biology perspective. Adaptability and maintenance of turfgrass species that are used in landscape and sports turf. Includes common, low maintenance, and intensively managed special sports turf species; sports turf construction techniques; establishment; fertility and integrated pest management. *Prerequisite:* AECL/PLNT 2025 or LIFE 2023. (Normally offered spring semester of odd-numbered years)

4150. Arboriculture. 4. Focuses on the biology and management of trees. The objective is to understand how biological processes determine tree growth, architecture, maintenance, and management in the landscape. The emphasis is on trees in urban settings, though much of the material is applicable to wildland tree management. *Prerequisites:* AECL 2025 and 2026 or concurrent enrollment. (Normally offered fall semester of odd-numbered years)

4160. Western Landscape Design. 4. Designed for the challenges and limitations of high altitude landscaping with an emphasis on water use efficiency. Primary course concepts include construction using hard materials, xeriscaping principles, decreased water consumption using specialized irrigation systems and selection of native, adapted species, as well as basic landscape design principles. *Prerequisite:* PLNT 3400. (Normally offered spring semester of odd-numbered years)

4180. Horticultural Herbaceous Plant Production. 4. Production methods for a wide range of herbaceous plants including bedding plants, perennials, vegetables, flowering potted plants, and foliage plants. Emphasis is placed on current production techniques in controlled environments and in the field. Dual listed with PLNT 5180. *Prerequisite:* PLNT 3300. (Normally offered spring semester of odd-numbered years)

4200. Greenhouse Design and Management. 4. Emphasis on greenhouse structural and functional design concepts of economy, efficiency and energy conservation. Primary emphasis is on the limitations and advantages of greenhouses in the Rocky Mountain region, including alternative energy concepts. The management and operational concerns associated with private, commercial, educational and public greenhouses will be included. Dual listed with PLNT 5200. *Prerequisites:* AECL/PLNT 2025 or LIFE 2023 and a USP QA course. (Normally offered spring semester of even-numbered years)

4470 [CROP 4470]. Seed Science and Technology. 3. Presents aspects of seed biology and processing including development, physiology, ecology, germination, viability, dormancy, production, conditioning, storage, certification and marketing. Dual listed with PLNT 5470. *Prerequisite:* 8 hours of plant biology. (Normally offered fall semester of even years)

4520 [CROP 4520]. Plant Breeding. 3. [M3↔(none)] Principles and methods for genetic improvement of all kinds of plants including agronomic, horticultural, forest and range species. Emphasizes fundamental concepts of quantitative genetics and integration of classical plant breeding with emergent biotechnology. *Prerequisites:* MATH 1000 or statistics course; LIFE 4000. (Normally offered fall semester of odd-numbered years)

4790 [CROP 4700, 4790]. Topics: _____. **1-4 (Max. 10).** Dual listed with PLNT 5790. *Prerequisite:* senior standing. (Offered based on sufficient demand and resources)

4900. Undergraduate Teaching Practicum. 1-2 (Max. 4). Supervised participation of undergraduates in the teaching of laboratory sections offered by the Department of Plant Sciences. Provides opportunity for students to gain teaching experience in agroecology, horticulture, or life science. *Prerequisites:* AECL 1000 and junior or senior standing.

4975. Problems in Plant Science. 1-2 (Max. 4). Provides an opportunity for students to conduct supervised research on specific topics of interest and importance in crop breeding, genetics, physiology, pathology, ecology and pest management. *Prerequisites:* junior/senior standing with at least 10 hours of agroecology core requirements.

Department of Renewable Resources

2013 Agriculture Building, 766-2263

FAX: (307) 766-6403

Web site:

uwyo.edu/renewableresources

Professors:

ANN L. HILD, B.A. University of Iowa 1975; M.S. Texas Tech University 1991; Ph.D. 1995; Professor of Rangeland Ecology and Watershed Management 2008, 1996.

DAVID E. LEGG, B.S. University of Missouri 1978; M.S. 1980; Ph.D. University of Minnesota 1983; Professor of Entomology 2003, 1988.

LARRY C. MUNN, B.S. Ohio State University 1972; M.S. 1974; Ph.D. Montana State University 1977; Professor of Soil Science 1992, 1981.

RICHARD A. OLSON, B.S. University of Wisconsin (River Falls) 1970; M.S. South Dakota State University 1975; Ph.D. North Dakota State University 1979; Professor of Wildlife Habitat Ecology and Management 2000, 1989.

KATTA J. REDDY, B.S. A.P. Agricultural University (India) 1978; M.S. 1980; Ph.D. Colorado State University 1986; Professor of Water Quality 2006, 2000.

SCOTT R. SHAW, B.S. Michigan State University 1977; M.S. University of Maryland 1981; Ph.D. 1984; Professor of Entomology 1998, 1989.

MICHAEL A. SMITH, B.S. Texas Tech University 1967; M.S. 1972; Ph.D. Utah State University 1977; Professor of Rangeland Ecology and Watershed Management 1992, 1978.

THOMAS L. THUROW, B.S. University of Idaho 1977; M.S. Brigham Young University 1979; Ph.D. Texas A&M University 1985; Professor of Rangeland Ecology and Watershed Management 1999.

GEORGE F. VANCE, B.S. Michigan State University 1981; M.S. 1985; Ph.D. University of Illinois 1989; Professor of Soil and Environmental Chemistry 1998, 1989.

JAMES K. WANGBERG, B.A. Humboldt State College 1969; M.A. California State University-Humboldt 1973; Ph.D. University of Idaho 1976; Professor of Entomology 1986; Associate Dean 1999.

STEPHEN E. WILLIAMS, B.S. New Mexico State University 1970; M.S. 1972; Ph.D. North Carolina State University 1977; Professor of Soil Biology and Biochemistry 1987, 1976.

Associate Professors:

TIMOTHY R. COLLIER, B.S. University of California—Riverside 1987; Ph.D. University of California—Santa Barbara 1994; Associate Professor of Entomology 2008, 2002.

ALEXANDRE V. LATCHININSKY, B.S. St. Petersburg State University (Russia) 1979; M.S. 1980; Ph.D. University of Wyoming 2001; Associate Professor of Entomology 2008, 2003.

SCOTT N. MILLER, B.S. Brown University 1991; M.S. University of Arizona 1995; Ph.D. 2002; Associate Professor of Rangeland Ecology and Watershed Management 2008, 2002.

J. DANIEL RODGERS, B.S. East Texas State University 1963; M.S. Texas Tech University 1966; Ph.D. Utah State University 1980; Associate Professor of Rangeland Ecology and Watershed Management 1980.

PETER D. STAHL, B.S. Oklahoma State University 1978; M.S. University of Wyoming 1982; Ph.D. 1989; Associate Professor of Restoration Ecology 2005, 2000.

JAMES W. WAGGONER, JR., B.S. New Mexico State University 1970; M.S. 1972; Ph.D. University of Illinois 1975; Associate Professor of Rangeland Ecology and Watershed Management 1994.

DAVID G. WILLIAMS, B.A. University of Texas 1985; M.S. Texas A&M University 1988; Ph.D. Washington State University 1992; Associate Professor of Rangeland Ecology and Watershed Management 2002.

Assistant Professors:

JEFFREY L. BECK, B.S. Brigham Young University 1993; M.S. 1996; Ph.D. University of Idaho 2003; Assistant Professor of Rangeland Ecology and Watershed Management 2007.

THIJS KELLEENERS, B.S. Wageningen University, The Netherlands 1988; M.S. 1993; Ph.D. 2001.

JAY B. NORTON, B.S. University of Montana 1985; M.S. Iowa State University 1996; Ph.D. University of Montana 2000; Assistant Professor of Soil Science 2006.

VIRGINIA B. PAIGE, B.A. Colorado College 1984; M.S. University of Massachusetts 1992; Ph.D. University of Arizona 2000; Assistant Professor Rangeland Ecology and Watershed management 2004.

Academic Professional:

RACHEL D. MEALOR, B.S. University of Wyoming 2004; M.S. 2007; Assistant University Extension Coordinator 2007.

SCOTT SCHELL, B.S. University of Wyoming 1991; M.S. 1994; Assistant Extension Entomologist 2005.

SHIKHA SHARMA, M.S. University of Lucknow, India 1993; Ph.D. 1998; Assistant Research Scientist 2006.

Adjunct Professors:

Justin Derner, Brian Mealor, Jack Morgan, Ursula Norton, Ed Schmidtman, Gerald Schuman, Nancy Shaw, Ramesh Sivanpillai, Jeffrey Smith

Professors Emeriti:

Robert Heil, Robert Lavigne, William Laycock, John Lloyd, Robert Pfadt, Quentin Skinner, Thomas Wesche

The Department of Renewable Resources offers two programs leading to a Bachelor of Science degree. These are Rangeland Ecology and Watershed Management and Agroecology (an interdepartmental program offered through the Department of Renewable Resources and the Department of Plant Sciences). The coursework requirements necessary for obtaining an agroecology degree are described in the Department of Plant Sciences section of this publication. Either degree can also be obtained as an affiliate degree in conjunction with the School of Environment and Natural Resources. Seven minor degree programs are offered through the department: Insect Biology, Agricultural Entomology, Rangeland Ecology and Watershed Management, Soil Science, Agroecology, Forest Resources, and Reclamation and Restoration Ecology. Obtaining a minor to compliment a B.S. major degree program provides credentials and knowledge that can expand career opportunities.

The degree programs reflect the department's diverse expertise in natural resource and agriculture sciences. Students completing degrees offered through the department are well prepared for careers in natural resource management and sustainable agriculture (e.g., range management, watershed management, restoration ecology/reclamation of degraded land, wildlife habitat management, biocontrol/integrated pest management, soil science and various types of environmental consulting) or other science careers.

Minor in Forest Resources

The primary goal of the Forest Resources minor degree program is to develop a working knowledge of the processes that influence provision of the key products derived from forest lands. Courses taken in fulfillment of a major degree program will also be able to be applied to a minor degree program.

Hrs.
Minimum Requirements 20
RNEW 2100, SOIL 4150, RNEW 4775, and REWM 4540. Choose one from REWM 3100, REWM 4285, REWM 4700, or GEOG 4420; choose one from GEOG 2550 or REWM 4103; choose one from REWM 2000, ZOO 2450, RNEW 3000, or GEOG 4470.

Minor in Reclamation and Restoration Ecology

This program covers the use of basic and applied ecological concepts to rehabilitate and restore processes and functions to disturbed ecosystems.

Hrs.
Required Courses 14
LIFE 3400, SOIL 2010, REWM 4200, 4210, 4580
Planning and Policy (choose one) 3
AGEC 4710, ENR 3000, GEOG 4040, 4750, REWM 4051, 4052, 4900
Below-Ground Processes
(choose one) 3-4
LIFE 4400, CE 4800, 4820, SOIL 4100, 4120, 4140, 4150, 4160
Above-Ground Processes
(choose one) 2-4
BOT 4140, 4700, 4111 or
GEOG 4112, CROP 5070, ENTO 4678, 4685, GEOG 4200, REWM 4285, 4540, 4700, 4710, 4850, ZOO 4550
Total **22-25**

See the *Graduate School Bulletin* for details on the Reclamation and Restoration Ecology graduate certificate program

Renewable Resources (RNEW)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

2100 [BOT 2100]. Forest Management. 3. Principles of forest management. Topics include the laws affecting forest management, methods of harvesting wood from forests, fire and insect management, the effects of disturbances on stream flow and nutrient cycling, and the challenges of developing management plans for forests. *Prerequisites:* LIFE 1001 or 1010.

2345. Natural Resource Ethics. 3.0. [(none)◀CH, D] Introduction to ethics in context of natural resource extraction, use, conservation, preservation, and distribution. Ethical frameworks include teleological and deontological theories primarily applied to human needs and wants. Concepts and applications of environmental justice are addressed, including private property, sustainability, and obligations to future generations. Cross listed with PHIL 2340. *Prerequisites:* none.

3000. Tropical Ecology. 3. Examines the characteristics of tropical ecosystems, how they evolved, their value to humans, their present status, and current issues relating to biodiversity, deforestation, extinction, and conservation. *Prerequisites:* LIFE 1001 or 1010.

4130. Applied Remote Sensing for Agricultural Management. 3. Addresses specific applications of remote sensing to cropland and rangeland management. Provides an overview of remote sensing, specific applications for crops, shrubs and range vegetation. The course foundation will be agriculture-specific remote sensing of green plants. Cross listed with AECL/BOT 4130; dual listed with RNEW 5130. *Prerequisites:* QA course and 9 credit hours in student's major field and junior/senior standing or permission of instructor.

4340. Issues: Environmental Ethics. 3. Encompasses selected topics in environmental and natural resource ethics. Cross listed with PHIL 4340. *Prerequisites:* PHIL 2330, 2340, 3300, 3350.

4400. Invasive Plant Ecology. 3. Ecological impacts of invasive, non-indigenous plant species, the ecological, genetic and evolutionary hypotheses for invasiveness, as well as management strategies for invasive plant species. Dual listed with RNEW 5400. *Prerequisite:* LIFE 3400.

4510. Research Planning in Renewable Resources. 3. [W3◀WC] An interdisciplinary course examining the process and nature of scientific inquiry in renewable resources. Topics include: types of inquiry, forming and testing hypotheses, literature review, methodology, data summary and scientific writing. Each student prepares a study plan, grant, research proposal, journal article, or initial thesis draft. Writing is emphasized. Dual listed with RNEW 5510. *Prerequisite:* basic training in renewable resources, ecology or related discipline.

4730. Plant Physiological Ecology. 4. Acquaints advanced students with environmental factors which affect the establishment and growth of plants. Emphasizes adaptive mechanisms. Dual listed with RNEW 5730. Cross listed with BOT 4730. *Prerequisites:* one course in physiology and one course in ecology. (Normally offered spring semester)

4775. Forest Ecology. 4. Integrative study of the structure, function, and ecological diversity of forested ecosystems, and the physical factors that influence this diversity, including emergent properties of energy flow and nutrient cycling. Special emphasis is given to understanding forest disturbances and succession, and implications for impacts of management and sustainability are discussed throughout. Cross listed with BOT 4775. *Prerequisite:* LIFE 3400.

4990. Topics in: _____ 1-4 (Max. 8). Special topics pertaining to renewable natural resource management. Intended to accommodate instruction in various specialized subjects not offered on a regular basis. Students may enroll in more than one section of this course provided topics are different. Dual listed with RNEW 5990. *Prerequisite:* consent of the instructor to pursue study of the topic.

Environment and Natural Resources Affiliate Degrees

Bachelor of Science degrees in either the Agroecology or the Rangeland Ecology and Watershed Management offered through the Renewable Resources Department may also be obtained as affiliate degrees with the School of Environment and Natural Resources (i.e., the degree titles would be Environment and Natural Resources/Rangeland Ecology and Watershed Management or Environment and Natural Resources/Agroecology). The additional coursework requirements necessary for obtaining an affiliate degree are described in the School of Environment and Natural Resources section of this publication.

Entomology Minors Programs

Because of the pervasiveness of insects, the entomology minors programs provide a vital link among the life and environmental sciences at the University of Wyoming. Students will be prepared to serve society not just through the vital industry of agriculture, but through contributions to basic biology, human and animal health, ecosystem management, wildlife conservation and a myriad of other ways.

Minor in Insect Biology

This minor is intended for students who have an interest in insects as organisms, including their basic biology, ecology and evolution. As insects dominate biological diversity, they are essential to most ecological systems, and have unique physiological systems. Students majoring in zoology, botany, molecular biology, biology or similar fields will find the study of these organisms a rewarding and valuable (if not essential) element of the life sciences.

In terms of biological diversity, at least 75 percent of all species are insects, with over 800,000 known species and another 10-50 million yet to be described. Insects are increasingly used as bioindicators of environmental health. Many industries now recognize that insects may be the world's richest, untapped natural resource, with billions of dollars of unexploited goods and services. Accessing these resources requires trained entomologists. Such training demands an academic setting, such as the University of Wyoming, where collections are maintained, productive faculty are involved in quality research and teaching, the latest methodologies are avail-

able and taught, the necessary scientific literature is readily accessible and a curriculum allows the student to pursue this field.

Minimum requirements13
From the following: ENTO 1000 or 1001;
ENTO 4500, 4665, 4678, 4682, 4684,
4685, 4686, 4687, 4884, 5601 or 5602,
RNEW 3000

Minor in Agricultural Entomology

This minor is intended for students who have an interest in insects as beneficial and pestiferous agents in agricultural and health settings, with an emphasis on the applied ecology and management of these organisms. As insect damage (e.g., plant feeding, disease transmission, etc.) and services (e.g., biological control, pollination, etc.) are each valued at billions of dollars per year, students majoring in agroecology, animal science, rangeland ecology and watershed management or similar fields will find the study of these organisms a rewarding and valuable (if not essential) element of their education.

Minimum requirements 11
From the following: ENTO 1000 or 1001;
ENTO 4682, 4685 or AECL 3030; ENTO
4765 or 4500 or 4665

Insect Biology/Entomology Graduate Study

The department offers graduate work leading to the Master of Science and Doctor of Philosophy in entomology and an affiliated graduate option in water resources. Department faculty have active programs in insect ecology (biological control, population biology and plant-insect interactions), systematics (taxonomy, phylogeny and evolution) and pest management (biological control, biometrics and sampling, and pest management on humans, livestock, crops and rangeland). See the *Graduate Bulletin* for more details.

Entomology (ENTO)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Insect Biology. 3. [(none)↔SB] Introduces insects and related arthropods. Introduces aspects of insect biology, behavior, life history and diversity, as well as many ways that insects affect humans.

1001. Insect Biology. 4. [S1↔SB] Covers same lecture material as ENTO 1000, but includes a laboratory.

1100. The Biodiversity Crisis. 3. [S1,G1↔(none)] Addresses ongoing, unprecedented rate of extinction. Examines how biological diversity is measured, factors causing current extinctions and biological, as well as technological and political/economic means of conserving biodiversity.

1150. Pesticide Safety and Application. 1. Introduces various types and safe methods of pesticides application. Subsequent to completion, students may take the certification test administered by the Wyoming Department of Agriculture. Cross listed with CROP 1150. Offered S/U only. (Normally offered the week prior to spring semester)

1345. Entomological Experimentation. 1-3 (Max. 3). Individual library, laboratory or field study of insects. Experiments can be conducted during summer months, and/or at sites removed from the university, at discretion and consent of instructor. Offered S/U only. (Offered fall, spring and summer semesters)

2000. Pest and Beneficial Insects of the Farm and Rangeland. 1. Interactions of insects with plants and domestic animals with an emphasis on biologically-based pest management. Offered S/U only. *Prerequisite:* 3 credit hours of biology, or relevant work experience.

2001. Insects in the Urban Environment. 1. Detection, identification and management of insects adversely affecting plant and human health in the urban environment. Satisfactory/Unsatisfactory only. *Prerequisite:* 3 credit hours of biology, or relevant work experience.

4100. Senior Thesis: Proposal Preparation. 1-3 (Max. 6). Individualized preparation of a research proposal for a senior thesis project. Offered S/U only. *Prerequisite:* senior standing.

4200. Senior Thesis: Research Project. 1-3 (Max. 6). Individualized research project based on the senior thesis proposal. Offered S/U only. *Prerequisite:* ENTO 4100.

4300. Applied Insect Ecology. 3. Examines concepts of insect ecology and their application to the management of agricultural and rangeland insect pests. Control of rangeland weeds using insects in also examined. Covers population dynamics, predator-prey and insect-plant interactions, biological control and integrated pest management. *Prerequisite:* ENTO 1000 or 9 hours of biology or ecology-related coursework.

4360. Medical Entomology and Parasitology. 4. Emphasis is on medically important arthropods, protozoa, and worms; clinical effects of infection, epidemiology, avoidance/control and identification/diagnosis. Dual listed with ENTO 5360. *Prerequisite:* 8 hours of biological science. (Normally offered spring semester)

4665. Insects Affecting Livestock. 3. Biology, importance and control of insect pests of livestock. Recognition of live and preserved specimens. Recent research. Dual listed with ENTO 5665. *Prerequisite:* ENTO 1000. (Normally offered spring semester of even-numbered years)

4678. Aquatic Entomology. 3. Emphasizes biology, ecology, distribution and taxonomy of aquatic insects. Includes aquatic insects as indicators of pollution. Students must make and identify a collection of immature aquatic insects. Dual listed with ENTO 5678. *Prerequisite:* ENTO 1000, 1001. (Normally offered fall semester of even-numbered years)

4682. Insect Anatomy and Physiology. 5. [W3♦(none)] Studies structure and function of the insect body, particularly emphasizing the relationship between anatomical features and their cellular/biochemical functions. Dual listed with ENTO 5682. *Prerequisite:* ENTO 1000. (Normally offered spring semester of even-numbered years)

4684. Classification of Insects. 4. Studies insect orders, families and taxonomic treatises. Requires collection of adult insects representing 100 families, or equivalent museum project, for completion of course requirements. Dual listed with ENTO 5684. *Prerequisite:* ENTO 1000; ENTO 4670 is recommended. (Normally offered fall semester of odd-numbered years)

4685. Insect-Plant Interactions. 2. Ecology of insect-plant interactions, including host finding and utilization and plant response to insect feeding. Aspects of chemical/physiological ecology, and management of insects using biologically-based techniques are addressed. Examples from various terrestrial systems, including cultivated lands, grasslands, and forest systems, are used. Dual listed with ENTO 5685. *Prerequisites:* one year of basic biology; course work in entomology and botany recommended. (Normally offered fall semester of even-numbered years)

4686. Problems in Entomology. 1-3 (Max. 6). Individual library, laboratory or field study of insects. *Prerequisites:* 4 hours of biological science and 3 hours of entomology. (Offered fall, spring and summer semesters)

4687. Insect Evolution. 3. Examines major events of insect evolution including origins, fossils, wings and flight, metamorphosis, extinct orders, diversification patterns of modern orders, climate change, plate tectonics, coevolution with plants, parasitism, social behavior and origin of modern faunas. Dual listed with ENTO 5687. *Prerequisite:* ENTO 4684 required; ENTO 4670, 4682 recommended.

4765. Medical Entomology. 3. Recognition and bionomics of insects of medical importance. Dual listed with ENTO 5765. *Prerequisite:* ENTO 1000. (Normally offered spring semester of even-numbered years)

4852. Senior/Graduate Seminar. 1 (Max. toward B.S. 2; Max. toward M.S. 2; Max. toward Ph.D. 6). Presentation of results and interpretation of the senior thesis research. Dual listed with ENTO 5852.

4884. Insect Behavior. 3. Examines the behavior of insects, including foraging, mating and social behavior. The course focuses on the applied as well as the fundamental aspects of behaviors, and both the strategic and physiological bases of behavior. Dual listed with ENTO 5884. *Prerequisite:* ENTO 1000.

Agroecology Program

Rooms 50/2013 Agriculture Building
(307) 766-3103/766-2263
Departments of Plant Sciences and Renewable Resources

The Bachelor of Science degree program in agroecology is an interdepartmental major involving the collaborative teaching, advising and research expertise in the Departments of Plant Sciences and Renewable Resources. An agroecology minor is also available. See page 91 for more information on the Agroecology program.

Rangeland Ecology and Watershed Management Major

Rangeland occupies 47% of the Earth's land area. The 50 million acres of rangeland in Wyoming provide diverse opportunities for the multiple uses of livestock and wildlife grazing, recreation, water production and natural beauty. Students are taught to understand and manage complex rangeland ecosystems.

The rangeland ecology and watershed management curriculum is designed for students choosing to study ecology, utilization and management of rangelands and wildland watersheds and related resources of forestry, recreation, wildlife management, soil science, botany and zoology. Degrees include Bachelor of Science, Master of Science and Doctor of Philosophy.

The undergraduate course of study helps students become well prepared for careers in natural resource management (e.g., range management, watershed management, restoration ecology/reclamation of degraded land, wildlife habitat management, ranch management, various types of environmental consulting), or other natural science careers. The curriculum fully meets the Office of Personnel Management (OPM) requirements for Range Conservationist. By appropriate course selection within the elective hours, students will also meet OPM requirements for additional professional work, such as soil conservationist or hydrologist.

Rangeland Ecology and Watershed Management Graduate Study

Areas of graduate study leading to a M.S. or Ph.D. in rangeland ecology and watershed management include range ecology, animal nutrition, watershed management, wildlife habitat management, restoration ecology and reclamation of disturbed lands. A graduate certificate in reclamation and restoration ecology and a graduate option in water resources are offered in affiliation with the rangeland ecology and watershed management graduate degree. See *Graduate Bulletin* for more detailed information.

Course Requirements for a Major in Rangeland Ecology and Watershed Management (B.S.)

	<i>Hrs.</i>
REWM 2000, 2500, 3020, 3500, 4330, 4530, 4700, 4830, 4850, 4900	26
Resource management.....	15-16
SOIL 2010, SOIL 4120, AGECE 4700, and choose one from BOT 4111, or RNEW 4130, BOT 3150 or GEOG 4200, USP general education requirements	14-15
Biological sciences	14-15
LIFE 1010 and 2022, 2023, or MICR 2021, LIFE 3400, and BOT 4680 or REWM 4300	4
CHEM 1000	9
Communication skills	9
USP WA and WB writing courses, COJO 1010 Mathematics and quantitative reasoning	7
USP Quantitative Reasoning course, MATH 1000 or 1400, STAT 2050	15
Humanities and social sciences.....	1020
USP general education requirements, AGECE 1020	1
Physical education	29-30
Electives	120
Total	120

Concentrations

Rangeland ecology and watershed management are inherently broad fields and are becoming more diverse. Eight informal disciplinary concentrations are offered to expand educational experiences and enhance career opportunities. All require completion of basic core curriculum and additional course selections to fill unrestricted elective hours.

Rangeland Livestock Management. Management and production of domestic livestock on rangelands.

Rangeland Habitat Management. Manipulation of habitat of range animals, especially wildlife, for production, damage control, increased benefits of grazing impacts or increased recreational use.

Rangeland Ecology. The inherently multidisciplinary nature of range science, including interactions of natural vegetation, domestic livestock, wildlife, soils and management.

Natural Resources. Broad background in all aspects of natural resource management as required by federal and state management agencies.

Rangeland Improvements. Principles and practices to enhance rangeland values and uses through applied manipulations of both biotic and abiotic components of rangelands.

Rangeland Reclamation. Reclamation of drastically disturbed rangelands, including remediation of rangeland ecosystems impacted by such activities as surface mining, oil/gas development, wildfire and others.

Wildland Watershed Management and Range Hydrology. These two options provide a broad ecological basis for managing water resources, preparing students for participating in multidisciplinary decision-making processes affiliated with managing wildland watersheds.

Rangeland Business Management. The business of range animal management and production or recreational use of rangeland.

In addition, the department offers an approved ENR concentration in the School of Environment and Natural Resources.

Minor

A minor in rangeland ecology and watershed management is available for students in other majors interested in increasing their knowledge of the field. The number of hours required is 22. The required courses for the minor are: LIFE 1010 (4 hrs) and 3400 (3); and REWM 2000 (3), 2500 (2), 4330 (3), 4530 (1) and 6 hrs. selected from other REWM upper-division (3000 or 4000 level) courses.

Rangeland Ecology and Watershed Management (REWM)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Introduction to Range Management. 1. Introduces range management profession and the department. Assists in outlining an academic and work experience program consistent with students' career objectives. Discusses employment opportunities in range management and related fields. (Offered based on sufficient demand and resources)

2000. Principles of Rangeland Management. 3. Basic principles of range management as they apply to various regions and vegetative types. Relationship of range management practices to livestock production, wildlife management, forestry, hydrology and other land uses. Introductory course for majors and non-majors. *Prerequisite:* LIFE 1001 or 1010. (Normally offered fall and spring semesters)

2500. Rangeland Plant Identification. 2. Sight identification and distribution of western U.S. rangeland plants. *Prerequisite:* REWM 2000. (Normally offered fall semester)

3020. Nutritional Management of Grazing Ungulates. 3. Characterization of grazing animal nutritional needs and foraging behavior; rangeland forages and supplements. Management of animals and forages/feeds to optimize nutrient intake. *Prerequisite:* approved University Studies biological sciences course. (Normally offered fall semester)

3100. Principles of Wildland Water Quality. 3. Basic principles of aquatic chemistry and water quality as they relate to watershed management practices including livestock production, agronomic production, mineral and natural gas extraction and other land uses. *Prerequisite:* CHEM 1000. (Normally offered fall semester)

3390. Range Judging. 2. Identification of important range plants based upon specialized morphological characteristics. UW Range Judging Team is selected from this course. *Prerequisite:* REWM 3000, 3320, LIFE 2022. (Normally offered spring semester)

3500. Rangeland Plant Ecophysiology. 3. Examines plant physiological processes that have application to ecological and land management issues. Topics include carbon assimilation, water relations, mineral nutrition as applied to plant distributions, plant and system responses to grazing, as well as plant tolerance of extreme conditions including drought, excessive temperatures and changes in climate. *Prerequisite:* LIFE 2023. (Normally offered fall semester)

4000. Poisonous Plants and Plant Toxins. 3. Plants poisonous to livestock in Wyoming and the Mountain West; identification, ecology, toxic principles, physiologic responses of animals, situations leading to poisoning, control and management to prevent losses. *Prerequisite:* 12 hours of biological and chemical sciences. (Normally offered spring semester)

4051. Environmental Politics. 3. [C2, W3↔WC, D] Analyzes environmentalism as a political phenomenon. Provides students with a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with AMST, ENR, GEOG and POLS 4051. *Prerequisite:* POLS 1000.

4052. Federal Land Politics. 3. Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with POLS/ENR/GEOG/AMST 4052. *Prerequisite:* POLS 1000.

4103 [3103]. Range and Ranch Recreation. 3. [C2↔(none)] Understanding of public demands for leisure use of public and private rangelands; potential impacts on rangeland resources, ranch practices and families and other rangeland users. Students prepare public range or private ranch recreation operations plan. Graduate students assist in preparation and presentation of lecture. Dual listed with REWM 5103. *Prerequisites:* REWM 2000 and GEOG 2550. (Normally offered spring semester)

4150 [3150]. Behavior Modification for Production of Grazing Herbivores. 3. Strategies for manipulation of behavior and management of the grazing herbivore will be developed from scientific and practical information. Designed to equip the student to manage for animal and natural resource production. Dual listed with REWM 5150. *Prerequisites:* REWM 2000 and REWM 3020 or ANSC 3100. (Normally offered spring semester)

4200. Reclamation of Drastically Disturbed Lands. 3. Overviews reclamation of drastically disturbed lands in the west, emphasizing surface mined lands. Includes principles of ecology, agronomy, soils and other relevant disciplines as applied to mitigate adverse environmental impacts of land disturbance. *Prerequisite:* LIFE 3400, AECL 2100. (Normally offered fall semester)

4210. Land Reclamation Seminar. 1 (Max. 2). Discusses pertinent topics within the reclamation field of disturbed lands. *Prerequisite:* REWM 4200 or concurrent registration. (Normally offered fall semester)

4285. Wildland Hydrology. 3. Teaches essential and unique characteristics of hydrologic cycle as occurred on range and forest lands, concentrating on quantification of these processes and storages. Dual listed with REWM 5285. *Prerequisite:* QA (Normally offered fall semester of even-numbered years)

4300 [3320]. Grass Taxonomy. 3. Identification of grasses and their place in range management and world agriculture. Dual listed with REWM 5300. *Prerequisite:* LIFE 2022. (Normally offered spring semester)

4330. Rangeland Ecosystem Assessment and Monitoring. 3. [M3↔(none)] Inventory and analysis of rangeland resources; vegetation; as well as concepts and techniques for utilization, condition, trend and suitability determination. *Prerequisites:* QA (such as MATH 1000), REWM 2000, SB. (Normally offered fall semester)

4340. Reclamation Techniques Field Trip. 2. Provides increased comprehension of current land reclamation problems and solutions by means of a field trip to sites in region where land reclamation is occurring. *Prerequisite:* REWM 4200. (Normally offered fall semester)

4350. Rangeland Management Techniques Field Trip. 2 (Max. 4). Visits to range improvement projects and range research areas. *Prerequisite:* one full year of life science, preferably botany. (Normally offered spring semester of odd-numbered years)

4530. Seminar. 1 (Max. 2). Discusses pertinent range management problems. *Prerequisite:* REWM 2000.

4540. Problems. 1-4 (Max. 6). Experimental work or intensive reading and discussion on range management problems. Includes problems offered in the following areas of range management: natural resources ecology, livestock habitat, business, improvements, watershed, reclamation, extension and international development. *Prerequisite:* basic training in field of problem selected and consent of instructor. (Offered fall, spring and summer)

4550. Internship in _____. 1 (Max. 4). Supervised field experience in range management or disturbed land reclamation. No more than 4 credits. *Prerequisites:* basic course work in subject selected and consent of instructor. (Offered fall, spring and summer)

4580. Rangeland Restoration Ecology. 3.0. Detailed analysis of various disturbed ecosystems unique to western rangelands. Primary emphasis on plant community restoration following degradation from edaphic, biotic, hydrologic, and topographic influences on degradation and strategies for vegetative rehabilitation. Strong focus on current research to formulate restoration strategies. Dual listed with REWM 5580. *Prerequisites:* REWM 4850 or 4200, BOT 4700.

4700. Wildland Watershed Management. 3. Studies hydrological cycle with specific emphasis on the role of vegetation in hydrologic processes such as interception, surface detention storage, infiltration, percolation, run-off and water quality. Utilization of watersheds and vegetation manipulation practices to modify these hydrologic processes. *Prerequisite:* REWM 2000, CHEM 1000, LIFE 1001. (Normally offered spring semester)

4710 [4180]. Watershed Water Quality Management. 3. Studies watershed processes controlling water quality. Examines impacts of land use activities such as agriculture production, livestock grazing and mineral and natural gas extraction on surface water and ground water quality. Emphasis will be placed on water quality modeling and management. Dual listed with REWM 5710. *Prerequisites:* CHEM 1030, MATH 2200 and CHEM 2230 recommended. (Normally offered spring semester)

4750. Wildlife Habitat Restoration Ecology. 3. Emphasis on fundamental and applied aspects of restoration ecology for terrestrial wildlife habitats following anthropogenic and natural disturbances. Although the course overviews theoretical concepts applicable to many systems, there is a focus on applications for wildlife habitats in western North America. Dual listed with REWM 5750. *Prerequisites:* REWM 4330 and 4850.

4830. Ecological Applications for Wildland Management. 2. Emphasis on ecologically sound management to develop an understanding of interactions among rangeland ecosystems and herbivores and the influences of rangeland management on ecosystem stability, resilience and succession trajectory. *Prerequisites:* LIFE 3400 and REWM 2000. (Normally offered spring semester)

4850. Rangeland Vegetation Management Techniques. 3. Uses applied ecological principles in restoration of degraded rangeland ecosystems to introduce methods for manipulating rangeland vegetation that satisfy land management objectives. Provides ecologically-sound practices to maintain optimal and sustained yield of rangeland products. *Prerequisites:* REWM 2000 and SB. (Normally offered spring semester)

4900. Rangeland Management Planning. 3. [W3♦WC] Applies planning processes that integrate soil, vegetation, water, livestock, wildlife and environmental regulatory considerations within the context of satisfying ecologically sustainable rangeland management objectives. *Prerequisites:* REWM/ANSC 3020, REWM 4330, AGECE 1020, and SOIL 4120. (Normally offered spring semester)

4990. Undergraduate Teaching Practicum. 1 (Max 2). Teaching experience in classroom or laboratory assisting faculty instructor. (Offered based on sufficient demand and resources)

Earth System Science with a Concentration in Soil Science

The new Earth's Systems Science (ESS) undergraduate program integrates several disciplines across the UW campus, providing greater opportunities for students to learn about the importance of different components of the Earth. Soil Science is an integrating subject that unifies interactions among the atmosphere, hydrosphere, lithosphere and biosphere. An ESS degree with a concentration in Soil Science enhances educational opportunities for students by offering unique learning experiences because of UW's location, resources and faculty.

FRESHMAN YEAR: Fall		Hrs.
ESS	1000	2
CHEM	1020 or 1050	4
MATH	1450	5
LIFE	1010	4
Total		15

FRESHMAN YEAR: Spring		Hrs.
SOIL	2010	4
CHEM	1030 or 1060	4
COJO	1010	3
LIFE	2XXX	4
ENGL	1010	3
PEAC	1001	1
Total		16

SOPHOMORE YEAR: Fall		Hrs.
ESS	2000	4
SOIL	3130	3
MATH	2200	4
USP Cultural Context and Diversity		3
Total		14

SOPHOMORE YEAR: Spring		Hrs.
MATH	2205	4
GEOL/GEOG Elective		5
BOT Elective		3
REWM Elective		3
Total		15

JUNIOR YEAR: Fall		Hrs.
SOIL	4120	4
ESS	3480	3
PHYS	1310	4
USP Oral Communication		3
Total		14

JUNIOR YEAR: Spring		Hrs.
ESS	4001	4
SOIL	4100	3
SOIL	4140	4
BOT/GEOL/GEOG 4111		3
Total		14

JUNIOR YEAR: Summer (optional)		Hrs.
ESS	4970	3

SENIOR YEAR: Fall		Hrs.
SOIL	4535	3
SOIL	4430	3
GEOG	4200	4
USP Cultural Context		6
Total		16

SENIOR YEAR: Spring		Hrs.
ESS	4950	3
SOIL	4130	3
SOIL	4150 or 4160	3
SOIL	4720	1
USP V Course		3
Total		13

Total Credit Hours 120

Minor in Soil Science

This program is designed to enhance soil expertise for students majoring in agricultural, natural resources, and environmental sciences degree programs. Undergraduate students minoring in Soil Science will enhance their job prospects with federal land management or conservation agencies (e.g., Forest Service, Bureau of Land Management, Natural Resources Conservation Society), state and federal regulatory agencies (e.g., Wyoming Department of Environmental Quality), mining and oil companies, environmental consulting companies, or scientific research organizations.

Course requirements (15 credit hours) for a Soil Science minor are: SOIL 2010, plus 11 credits of upper-division soil science courses for a total of 15 credits.

Soil Science Graduate Study

The department offers graduate work leading to the Master of Science and Doctor of Philosophy degrees in soil science, an affiliated graduate certificate in reclamation and restoration ecology and an affiliated graduate option in water resources. Our faculty have active programs in soil-plant fertility and nutrition, soil morphology, genesis and classification, soil and water quality, environmental soil microbiology, soil and environmental chemistry, and soil and water physics. See the *Graduate Bulletin* for more details

Soil Science (SOIL)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2010 [AECL 2010]. Introduction to Soil Science. 4. [S3↔SE] Introduces soil ecological processes and management in terrestrial environments. Discusses interaction of soil, biological, chemical, morphological, and physical properties with land management in wildland and agricultural ecosystems. Emphasis of the course is on plant response to soil conditions. *Prerequisite:* 4 hours of chemistry. (Offered spring semester)

2300. Irrigation Principles. 3. Studies basic soil-water relationships, evapotranspiration, water quality criteria, efficiencies, plant response and management, as they apply to irrigation of agricultural lands. Cross listed with PLNT 2300. *Prerequisite:* MATH 1400.

3130. Environmental Quality. 3. Introduction to environmental quality issues and events. Course emphasizes impacts to soil, water, atmospheric, and vegetative ecosystems due to different nutrients and contaminants, including nitrogen, phosphorus, sulfur, trace elements, and organic chemicals. Current information pertaining to environmental quality is discussed and a field trip to the Union Pacific Tie Plant. *Prerequisite:* complete at least 1 University Studies Science course SB, SP or SE. (Offered fall semester)

4100. Soil Physics. 3. [M3↔(none)] Examines forms and interrelations of matter and energy in the soil environment. Primarily addresses fluxes and transformations of soil water and solutes, as well as physical properties that influence soil productivity. Dual listed with SOIL 5100. *Prerequisite:* SOIL 2010 or equivalent introductory soils course. (Offered spring semester)

4105. Soil Physics Laboratory. 2. Teaches students the methodology and use of equipment to measure soil physical properties in the laboratory and field. Experiments include particle size analysis, soil surface area, soil-water measurement with neutron probe and TDR, field infiltration rate, soil-water retention curve, soil pore size distribution saturated and unsaturated conductivities, soil water potential and solute breakthrough curve. Dual listed with SOIL 5105. *Prerequisite:* SOIL 2010.

4120. Genesis, Morphology and Classification of Soils. 4. Processes of soil development and methods of description, survey and classification. Includes field trips which examine soils in the Laramie Basin and surrounding mountains. Dual listed with SOIL 5120. *Prerequisite:* SOIL 2010. (Offered fall semester)

4130. Chemistry of the Soil Environment. 3. [M3↔(none)] Introduction to the chemical properties and reactions that occur in the soil environment. Fundamental principles of soil mineralogy, organic matter and equilibrium chemistry as they relate to soil chemical reactions, plant nutrient availability and pedogenetic processes will be emphasized. Dual listed with SOIL 5130. *Prerequisite:* SOIL 2010, CHEM 1030 or CHEM 1060. (Offered spring semester)

4135. Soil Chemistry Laboratory. 2. Laboratory techniques and methods of analysis will be used to examine soils, sediments, and water chemical characteristics and reactions. Experiments will include data analysis, computer models, nutrient and contaminant characteristics, mineral properties, soil/sediment oxidation-reduction reactions as well as others. Students will be required to develop a soil chemistry experiment in their area of interest. Dual listed with SOIL 5135. *Prerequisite:* completion or concurrent enrollment in SOIL 4130/5130 or GEOL 4777.

4140. Soil Microbiology. 4. Fundamental principles of soil microbiology and how they relate to microbial ecology, environmental contamination, agriculture and forestry. Dual listed with SOIL 5140; Cross listed with AECL/MICR 4140. *Prerequisite:* SOIL/AECL 2010. (Offered spring semester)

4150. Forest and Range Soils. 3. Characteristics and management of forest and range soils primarily in arid environments. Examines pedagogical units representative of forests and ranges and soil properties, such as nutrient availability and water relations that influence plant growth. Dual listed with SOIL 5150. *Prerequisites:* SOIL 2010 and LIFE 2023. (Normally offered fall semester)

4160. Soil Fertility and Fertilizers. 3. Physical, chemical and biological aspects of soils that impact fertilizer fate, uptake and plant growth. Dual listed with SOIL 5160. *Prerequisite:* SOIL 2010. (Normally offered fall semester of odd-numbered years)

4170. Analytical Methods for Ecosystems Research. 4. Introduces methods for collecting, preparing and analyzing environment solid and solution samples. Emphasizes instrumental methods, quality control/quality assurance and data analysis. Requires student participation in laboratory sessions, which involve analysis of different environmental samples. Dual listed with SOIL 5170. *Prerequisites:* CHEM 1030, CHEM 1060 and CHEM 2230 recommended. (Normally offered fall semester of odd-numbered years)

4535. Soil Biogeochemistry. 3. Focuses on fundamental considerations of organic substances, microbiological systems, and chemical processes in soils, sediments and waters. Examination of the nature and origin of organic matter and the role of microorganisms in organic nutrient transformations, reactions, and interactions in different ecosystems. Dual listed with SOIL 5535. *Prerequisites:* SOIL 2010, completion of courses in introductory college chemistry and biology, and consent of instructor(s).

4565. Research: Soil Science. 1-4 (Max. 6.0). Library, laboratory, and/or green-house investigations on select research topics. Graduate students will be required to give a presentation to the soil science group on their final product/report. Dual listed with SOIL 5565. *Prerequisite:* basic training in soil science research.

Department of Veterinary Sciences

Wyoming State Veterinary Laboratory, 742-6638

FAX: (307) 721-2051

Web site: www.uwyo.edu/vetsci

Department Head: Don Montgomery

Professors:

E. LEE BELDEN, B.S. University of Wyoming 1960; M.S. 1962; Ph.D. University of California-Davis 1971; Professor of Veterinary Sciences and Microbiology 1982, 1962.

FRANCIS D. GALEY, B.S. Colorado State University 1981; D.V.M. 1983; Ph.D. University of Illinois, Urbana-Champaign 1988; Head of the Department of Veterinary Sciences and Director of the Wyoming State Veterinary Laboratory 1999; Dean, College of Agriculture, 2001.

KENNETH W. MILLS, B.S. Southern Colorado State College 1973; M.S. Colorado State University 1976; Ph.D. Kansas State University 1983; Assistant Director, Wyoming State Veterinary Laboratory 1986; Professor of Veterinary Sciences 1996, 1984.

DONALD L. MONTGOMERY, D.V.M. Texas A&M University 1976; Ph.D. 1981; Professor of Veterinary Sciences 2008, 2003.

DONALD O'TOOLE, M.V.B. Trinity College, Dublin, Ireland 1977; Ph.D. Colorado State University 1982; Professor of Veterinary Sciences 1998, 1990.

MERL F. RAISBECK, B.S. Colorado State University 1973; D.V.M. 1975; M.S. University of Missouri 1982; Ph.D. 1984; Professor of Veterinary Sciences 1995, 1988.

Associate Professors:

TODD E. CORNISH, B.S. University of California-Davis 1990; D.V.M. 1994; Ph.D. University of Georgia 1999; Associate Professor of Veterinary Sciences 2005, 1999.

JONATHAN H. FOX, B.Sc., B.VSc. University of Liverpool, UK 1993; Ph.D. Virginia Tech 2002; Associate Professor of Veterinary Sciences 2008.

Assistant Professors:

GERARD P. ANDREWS, M.S. University of New Hampshire 1983; Ph.D. Uniformed Services University of Health Science 1993; Assistant Professor of Veterinary Sciences 2004.

SHANNON L. SWIST, B.S. Kansas State University 1998; D.V.M./M.S. 2003; Assistant Professor of Veterinary Sciences 2007.

CHAOQUN YAO, M.D. Tongji Medical University, China 1986; Ph.D. University of Georgia 1995; Assistant Professor of Veterinary Sciences 2008.

Adjunct Professors:

BARBARA S. DROLET, B.S. University of Wyoming 1986; M.S. 1989; Ph.D. Oregon State University 1994; Adjunct Professor of Veterinary Sciences 2002.

ROBERT P. ELLIS, B.S. University of Wyoming 1966; M.S. Purdue University 1969; Ph.D. 1972; Adjunct Professor of Veterinary Sciences 2003.

GEOFFREY J. LETCHWORTH, B.S. Trinity College 1965; D.V.M. New York State College of Veterinary Medicine 1972; Ph.D. Cornell University 1980; Adjunct Professor of Veterinary Sciences 2001.

LESLIE W. WOODS, B.A. University of San Diego 1977; D.V.M. University of California-Davis 1982; Ph.D. University of California 1996; Adjunct Associate Professor of Veterinary Sciences 2007.

Adjunct Associate Professor:

MIKE MILLER, B.S. Colorado State University 1980; D.V.M. 1985; Ph.D. 1989; Adjunct Associate Professor of Veterinary Sciences 2005.

Adjunct Assistant Professor:

KRISTINE E. BENNETT, B.A. Kalamazoo College 1995; Ph.D. Colorado State University 2003; Adjunct Assistant Professor of Veterinary Sciences 2006.

WALTER E. COOK, B.S. California Polytechnic State University 1989; D.V.M. University of California 1994; Ph.D. University of Wyoming 1999; Adjunct Assistant Professor of Veterinary Sciences 2003.

R. SCOTT SEVILLE, B.S. San Diego State University 1981; M.S. University of Wyoming 1987; Ph.D. 1992; Adjunct Assistant Professor of Veterinary Sciences 1998.

CYNTHIA M. TATE, B.S. Virginia Polytechnic and State University 1995; D.V.M. Virginia-Maryland Regional College of Veterinary Medicine 2000; Ph.D. University of Georgia 2005; Adjunct Assistant Professor of Veterinary Sciences 2006.

The Department of Veterinary Sciences and the Department of Animal Science have combined their efforts to offer B.S., M.S., and Ph.D. degrees in animal and veterinary sciences (see listing under this title). Several options within the major are available including preveterinary medicine and animal biology. Undergraduate course offerings of the Department of Veterinary Sciences are listed under the title of pathobiology. They were designed to familiarize students with the principles of animal disease and the basic biological and biomedical sciences.

The department operates the Wyoming State Veterinary Laboratory, an animal disease diagnostic laboratory (wyovet.uwyo.edu). This laboratory provides valuable hands-on experience for students interested in laboratory animal care, laboratory procedures, and research. Excellent faculty advisers are available for students interested in preveterinary medicine, microbiology, and animal biology.

Students interested in graduate degree programs involving research in domestic and wildlife disease problems or parasitology should consult the *Graduate Bulletin*

Pathobiology (PATB)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

2220. Pathogenic Microbiology. 4. Major communicable diseases of man caused by bacteria, mycoplasma. Discusses disease, diagnosis, treatment, prevention, and transmission. Cross listed with MICR 2220. *Prerequisite:* MICR 2210. (Offered spring semester)

4001. Epidemiology (Diseases in Population). 3. Basic epidemiologic concepts and approaches to population problems in medicine, with examples from veterinary and human health. Covers a wide spectrum of topics and introduces practical applications of epidemiology. Cross listed with MICR 4001. *Prerequisites:* MICR 2240 or PATB 2220 and STAT 2050.

4050. Problems in Animal Disease. 1-4 (Max. 6). Offers opportunity for supervised investigation of animal disease problems involving techniques of bacteriology, mycology, virology, gross pathology, histopathology and/or toxicology. *Prerequisites:* 12 semester hours of biological science and consent of instructor; MOLB 2210 is recommended for most students.

4100. Laboratory Animal Care and Management. 2. Informs junior, senior and graduate students of basic principles of care and management of the common laboratory animals used for research or as animal models of human disease. *Prerequisite:* 8 semester hours of biological science.

4110. Diseases of Food Animals and Horses. 3. Acquaints students with general principles of animal disease. Systematically discusses specific diseases of cattle, sheep, swine and horses. Dual listed with PATB 5110. *Prerequisite:* junior standing. (Normally offered spring semester)

4130. Mammalian Pathobiology. 3. Anatomical basis of disease in mammals. Emphasis on concepts of pathogenesis of disease, and the gross, microscopic and clinicopathological changes associated with lesions: cell injury and death; cellular degeneration; disturbances of growth and circulation; neoplasia; inflammation; and recognition of gross and microscopic tissue changes. Background in immunology will be beneficial. Dual listed with PATB 5130; cross listed with MICR 4130. *Prerequisite:* C or better in BIOL 2022.

4140. Principles of Toxicology. 3. Toxicology is the study of poisons, their mechanisms of action and their effects on various organisms including man and domestic animals. Designed to provide students in the life and environmental sciences with an understanding of the principles of toxicology as they apply to animal and human health, food safety and environmental studies. Dual listed with PATB 5140. *Prerequisite:* 9 hours of biological science (e.g., physiology), 4 hours chemistry, 3 hours biochemistry. (Normally offered fall semester of even-numbered years)

4150. Seminar. 1 (Max. 4). Preparation and oral presentation of papers on veterinary sciences topics. S/U Only. *Prerequisites:* 8 hours of biology and consent of instructor.

4170 [4120]. Diseases of Wildlife. 3. Introduction to wildlife diseases of the Rocky Mountain region and North America. Emphasis on infectious, parasitic, traumatic, toxic, and other disease agents with coverage of mechanisms of disease, epidemiology, and disease impacts on wildlife populations and species. Significant discussion of zoonotic diseases and diseases at the wildlife/domestic animal interface. Dual listed with PATB 5170. *Prerequisite:* 12 hours of biological or zoological sciences. (Offered spring semester of even-numbered years)

4200. Diagnostic Bacteriology. 1. Practical training with emphasis on diagnostic procedures used in a clinical microbiology laboratory. Students will identify bacterial pathogens of animals and humans. Taught in a clinical setting utilizing selected clinical material. Techniques employed in the processing and identification of clinically significant bacteria will be used and discussed. Safe laboratory practices for working with biohazards will be presented. Cross listed with MICR 4200. *Prerequisites:* junior standing and a microbiology course which included a laboratory.

4220. Molecular Mechanisms of Bacterial Pathogenesis. 3. Intended for students majoring in microbiology or a related field. The class will consist of lectures and small group decisions. Student responsibilities will include note-taking and preparation for discussion by completion of reading assignments consisting of classic and/or recent journal articles addressing the weekly topic. Cross listed with MICR 4220; dual listed with PATB 5220. *Prerequisites:* PATB/MICR 2220 and statistics (or epidemiology).

4310. Introduction to Veterinary Parasitology. 3. For animal science, zoology, biology or preveterinary majors. Discusses parasites of food producing and companion animals and uses preserved parasites in lecture and laboratory. *Prerequisite:* 8 hours of biological science. (Normally offered fall semester)

4320. Problems in Parasitology. 1-3 (Max. 5). Individual laboratory, library or field study of parasites and their host relations. *Prerequisites:* 8 semester hours of biological sciences or 3 semester hours of parasitology and consent of instructor.

4360. Medical Entomology and Parasitology. 4. Emphasis is on medically important arthropods, protozoa, and worms; clinical effects of infection, epidemiology, avoidance/control and identification/diagnosis. Cross listed with ENTO 4360; dual listed with PATB 5360. *Prerequisite:* 8 hours of biological science. (Normally offered spring semester)

4400. Immunology. 4. Biology of immune system; cellular and molecular mechanisms; host resistance to infectious agents; as well as hypersensitivities, autoimmunity, tumor and tissue rejection. Includes laboratory for immunological techniques. Cross listed with MOLB 4400. Dual listed with PATB 5400. *Prerequisite:* MOLB 2220. (Normally offered spring semester)

4500. Veterinary Parasitology. 3. [S1♦(none)] Biology, importance, diagnosis and control of helminth and protozoan parasites of wild and domestic animals. Arthropod vectors and/or intermediate hosts of helminth & protozoan parasites are included. Diagnostic procedures and identification familiarity with agents are emphasized in lab. *Prerequisite:* 8 hours of biological science. (Offered fall semester)

4710. Medical Virology. 3. Human and animal viruses as biological entities. Methods of study, classification, replication strategies, diagnostic approaches, epidemiology and significance as disease agents. Dual listed with PATB 5710. Cross listed with MICR 4710. *Prerequisite:* MOLB 2220 or MOLB 2240. (Normally offered fall semester)

Aims and Objectives

The College of Arts and Sciences (A&S) is committed to providing a balanced education that matches cultural breadth with disciplinary depth. Students in the College of Arts and Sciences learn to address complex contemporary problems and to place them in their wider social, historical and ethical contexts. To achieve these goals, degree programs require students to develop expertise in a particular field, gain critical understanding of major areas of human knowledge and select from required courses and free electives to prepare for the challenges of the new century.

A successful student in any of the departments and programs in the College of Arts and Sciences will have an excellent foundation for professional success, graduate study, and a passion for lifelong learning.

Through hands-on research and creative projects (either on faculty projects or independently with faculty guidance and mentoring), fieldwork, internships, and study abroad, students integrate and bring coherence to their classroom learning.

Student Responsibilities

To graduate from the College of Arts and Sciences, students must satisfy all university, college, and major requirements for a given degree. These requirements apply whether the work is taken within the college or transferred from anywhere else within or outside the university (please refer to section below "Acceptance of Transfer Work").

The college holds students responsible for knowing degree and major requirements and for completing the necessary courses. Students are also expected to know the regulations that govern the academic standards needed to continue study at the university. Students should be aware that changing majors and/or colleges may result in delays in meeting degree requirements and that requirements themselves sometimes change (see "Graduation: Requirements and Procedures" section of this bulletin).

Academic Advising

To help plan a program of study, students are assigned an academic adviser by the department/program of their major. Students undecided about a major are advised in the UW Center for Advising and Career Services (222 Knight Hall).

Students should consult regularly with their academic adviser not only for course scheduling, but also to discuss educational and career goals. Faculty and professional advisers can link

students to the many resources in the Division of Student Affairs to assist in researching options for undergraduate study and careers. Instructors are also willing to discuss concerns students may have regarding specific courses.

Prospective and current students will find useful information and resources for academic and extracurricular options at www.uwyo.edu/a&s.

Changing/Declaring a Major or Minor

When ready to declare a major, minor, or concurrent major in a department or program in the college, the appropriate form is available from the Office of the Registrar (167 Knight Hall) or the Registrar's Web page, (www.uwyo.edu/registrar/forms.html). Approval is required from the appropriate department heads/program directors and college deans. Departments/programs assign advisers.

Programs of Study Undergraduate Degrees

A variety of specialized concentrations are offered within many of the following degree programs. Take a look at the department sections in this Bulletin that follow this section or the departments' Web sites. Additionally, there are several inter-college or interdisciplinary degrees/majors such as Microbiology, Earth System Science, and the affiliated major in Environment and Natural Resources that draw courses from several disciplines. See more detailed descriptions in this Bulletin or the University of Wyoming home page at www.uwyo.edu, click on the A-Z Directory.

Bachelor of Arts

- American studies
- Anthropology
- Art
- Biology
- Botany
- Chemistry
- Communication
- Criminal justice
- English
- French
- Geography
- Geology and Earth sciences
- German
- History
- Humanities/fine arts
- International studies
- Journalism
- Mathematics
- Mathematics/science
- Music
- Philosophy
- Physics

- Political science
- Psychology
- Russian
- Self-designed major
- Social science
- Sociology
- Spanish
- Statistics
- Theatre and dance
- Women's studies

Bachelor of Science

- Astronomy/astrophysics
- Biology
- Botany
- Chemistry
- Chemistry (ACS approved)
- Communication
- Earth system science
- Environmental geology/geohydrology
- Geography
- Geology
- History
- Journalism
- Mathematics
- Mathematics/science
- Microbiology
- Physics
- Physics (Plus)
- Physiology
- Political science
- Self-designed major
- Social science
- Sociology
- Statistics
- Theatre and dance
- Wildlife and fisheries biology and management (professional)
- Zoology

Bachelor of Fine Arts

- Art
- Theatre and dance

Bachelor of Music

- Music performance
- Music education

Graduate Degrees

Master of Arts

- American studies
- Anthropology
- Communication
- English
- French
- Geography
- Geography/water resources
- German
- History
- International studies
- Mathematics

Philosophy
 Political science
 Psychology
 Psychology/Early Childhood Development
 Sociology
 Spanish

Master of Science

Botany
 Botany/water resources
 Chemistry
 Geology
 Geology/water resources
 Geophysics
 Mathematics
 Natural science
 Physics
 Psychology
 Psychology/early childhood development
 Reproductive biology
 Statistics
 Zoology and physiology
 Zoology and physiology/water resources

Master of Arts in Teaching

History
 Mathematics

Master of Fine Arts

Creative writing

Master of Science in Teaching

Chemistry
 Geography
 Mathematics
 Natural science
 Physics

Master of Music

Master of Music Education

Master of Planning

Planning (community and regional)

Master of Public Administration

Doctor of Philosophy

Anthropology
 Botany
 Chemistry
 Geology
 Geophysics
 Mathematics
 Neuroscience
 Physics
 Psychology
 Reproductive biology
 Statistics
 Zoology and physiology

For further information on the graduate degrees offered through the College of Arts and Sciences, please refer to the *Graduate Bulletin*.

Minors in Arts and Sciences

The College of Arts and Sciences offers all university students systematic studies leading to recognized academic minors. Minors are available in all academic programs in the college and in a number of interdisciplinary areas. Academic departments may require students in its major program to complete a minor.

A&S minors have two aims: to encourage students to create a focus for their course work outside their major by coordinating their elective studies; and to enhance chances of employment or graduate admission with a formally recognized field of study.

Minors consist of course requirements ranging from 18-24 credit hours of study, typically including significant work at the junior and senior level. At least 12 credit hours in a minor must be from courses not being counted toward the student's major. A&S departments and programs offering minors and interdisciplinary degrees may have further conditions and restrictions regarding requirements in the minor. To be counted toward a minor, courses must be completed with a grade of C or better.

Students desiring a minor must notify the department in which the minor is offered. Forms for declaring a minor are available in the Office of the Registrar (167 Knight Hall) or on the Registrar's Web page, (www.uwyo.edu/registrar/forms.html). The department of the minor will assign an adviser.

For a description of the minors in A&S, see department offices or web sites.

Minors available in the College of Arts and Sciences include:

African American Studies
 American Indian Studies
 American Studies
 Anthropology
 Archaeology
 Biological
 Sociocultural
 Linguistic
 Art
 Art history
 Ceramics
 Drawing
 Graphic Design
 Marketing Communication
 Painting
 Printmaking
 Sculpture
 Biology
 Botany
 Chemistry
 Chicano Studies
 Communication and journalism
 Communication
 Journalism
 Marketing Communication
 Public Relations

Criminal Justice
 English
 Literary studies
 Creative writing
 Professional writing
 European Studies
 Geography
 Geographic Information Sciences
 Geography
 Planning
 Geology/geophysics
 History
 International studies
 Asian studies
 European studies
 International studies
 Mathematics
 Computational Science
 Mathematics
 Modern and classical languages
 French
 German
 Japanese
 Latin
 Russian
 Spanish
 Music
 Paleoenvironmental studies
 (interdisciplinary)
 Philosophy
 Ethics
 Environmental values
 Philosophy
 Physics/astronomy
 Physics
 Astronomy
 Political science
 American politics
 International relations and comparative government
 Political philosophy
 Public law
 Psychology
 Religious studies
 Sociology
 Statistics
 Theatre and dance
 Dance
 Theatre
 Wildlife and fisheries biology
 and management
 Women's studies
 Zoology/physiology
 Animal and human physiology
 Neuroscience
 Zoology

Note: the minor in Aging and Human Development will be reorganized by the College of Health Sciences. Contact Lisa Shipley (lshipley@uwyo.edu), in the Health Sciences Center, room 110, (307) 766-6704 for information.

College Degree Requirements- The 2003 A&S Core Bachelor of Arts or Science Programs

Beginning fall 2003, new university and college general education curricula, the 2003 University Studies Program (USP) and the 2003 A&S Core were implemented. Refer to the USP section of this bulletin for details regarding University Studies requirements. Students who matriculate for the first time at UW or a Wyoming community college in fall 2003 or after are required to follow both the new USP and A&S Core. Students transferring from a Wyoming community college with an associate's degree and the Wyoming Core completed between May 2001 and fall 2003, may continue to complete the 1991 USP and 1991 A&S Core requirements (if there has been no interruption in their enrollment for a year or more). Students who matriculated at UW or a Wyoming community college prior to fall 2003 and choose the 2003 USP must also complete the 2003 A&S Core requirements. For additional information please refer to the sections in this bulletin that describe the university graduation requirements, the 2003 University Studies Program, and the policies for reenrolling at UW after an absence of a year or more.

I. College credit hour requirements

A. Minimum total semester hours 120

Professional degree programs require 128 hours. Total credit hours for degrees are exclusive of physical education and lower division armed forces credits.

B. Upper-division credit requirements (48).

Thirty of the 48 hours must be earned from UW. Courses must be taken for a letter grade unless offered for S/U only. This is an all-university requirement for all degree programs and may come from the courses that fulfill the USP, the A&S Core, the major, the minor, and electives.

C. Major field of study (30-60).

Credit hours in excess of 60 in the major subject may not be used to satisfy the requirement of 120 hours for graduation. At least 30 hours of C grade or better must be earned in the major subject (major programs may require more). Courses in the major must be taken for a letter grade unless offered for S/U only.

D. A&S Core requirements (9-28).

Courses must be taken for a letter grade unless offered for S/U only.

All other university and college regulations apply. See "Graduation: Requirements and Procedures" section of this bulletin for more information. Graduate level "Enrichment" courses do not count toward the requirements for a bachelor's degree.

II. 2003 A&S Core Curriculum

Graduates of the College of Arts and Sciences are expected to be liberally educated—to have the knowledge and skills to deal with the unexpected and to see opportunities from multiple perspectives. A liberal education enhances the intellectual flexibility needed to find new applications for knowledge and to offer varied solutions to complex problems. To develop these abilities, the college faculty designed the A&S Core (requirements differ slightly for students in some professional degree programs; check with your adviser).

1. SCIENCE: Two (S, SB, SP, SE) courses with laboratories, 8 credit hours, and two different prefixes.

However, if one of the courses is an Integrated Science (S) course, then both courses may be the same prefix. See the University Studies Program Booklet, the USP section in this bulletin, or the Web for approved courses. Science courses of 3 credit hours will not be accepted.

2. UPPER DIVISION: 9 credit hours of upper division courses outside the prefix of the department/program in which the student's major resides.

These courses may not simultaneously fulfill the University Studies Program Core Components (Intellectual Community, Quantitative Reasoning, Oral Communication, Constitutions, Writing A, Sciences, or Cultural Context).

These courses may not be cross-listed with the department of the major. This cross-listing rule does not apply to majors in A&S interdisciplinary programs (American Studies, Earth System Science, Microbiology, International Studies, and Women's Studies).

Students in distributed majors (Humanities/Fine Arts, Mathematics/Science, and Social Science) must take the 9 credit hours outside the first area of emphasis and these courses may not be cross-listed with that department/program.

These 9 hours count toward the university requirement of 48 upper division credit hours required for a bachelor's degree.

3. FOREIGN LANGUAGE: Two courses, 8 credit hours (or 4 hours 2nd or 3rd semester, completed with a grade of C).

Credit is awarded for satisfactory scores on one of the following: College Level Examination Program, Advanced Placement Examination, or International Baccalaureate credits. For accepted scores in a foreign language from AP, CLEP, and IB, refer to the section in this bulletin, "Credit Available to Undergraduate Students." Students with prior knowledge of a foreign language such as in high school or living abroad may earn foreign language credit by taking the examination offered by the

UW Department of Modern and Classical Languages. However, per University policy, students may not earn credit by examination if they already have college credit at the same level or above. For more information about credit by examination and appropriate placement in its courses, please see department's Web site or contact the department at (307) 766-4177/4180.

In addition to one of the traditional foreign languages, the College accepts American Sign Language in fulfilling the A&S Core requirement. However, the Departments of Anthropology, English, History, and the International Studies Program do not accept American Sign Language and also require more than eight credit hours of a single, traditional foreign language in its major. Also, the Bachelor of Music in vocal performance does not allow American Sign Language for its required eight hours of a foreign language.

Foreign students who are native speakers of a language other than English are exempted from the A&S foreign language requirement as long as they successfully complete the University Studies Writing A and B courses. Contact the Department of Modern and Classical Languages for more information.

4. NON-WESTERN PERSPECTIVES: One approved course, 3 credit hours.

A Non-Western Perspectives course is about and from the perspectives of non-Western European, non-Judeo-Christian traditions. This course may simultaneously fulfill other requirements in the University Studies Program, A&S Core, or the student's major. As they are approved, additional courses will be listed at www.uwyo.edu/a&s.

Approved Non-Western courses:

AAST/ART/ANTH	2730
AIST/SOC	1350
AIST/ANTH	2210
AIST/ANTH	4740
ANTH	1200
ANTH	2200
ANTH	3400
ANTH/INST	3420
ART	4650
ENGL	2340
ENGL	2345
HIST	2040
HIST	2041
HIST/RELI	2320
HIST	2460
HIST	2461
HIST	3220
HIST/WMST	4335
HP	2151 ¹
HP	2153 ²
INST	4990 ³
MUSC/ANTH	3015

MUSC	4050
POLS/INST	1200
POLS	4230
RELI	1000
RELI/AIST	2450
SOC	2140
SOC	3050
SOC	3100
SOC	3670
SOC/INST	4680
WMST	4590

¹HP 2151 is non-Western only when the topics are *The Empire Writes Back*, *Japanese Film and Literature*, *Indian Epic*, and *Foundations of Chinese Culture/China*.

²HP 2153 is non-Western only when the topic is *Bali: Life and Art*.

³INST 4990 is non-western only when the topics are *Women of India* and *China and Globalization*.

5. Professional Degree Programs and 2003 A&S Core: For several of the professional degree programs, the A&S Core has been reduced slightly - students may choose between the foreign language requirement and six-upper division credits outside the major department's prefix. The Departments of Art and Theatre & Dance require the entire A&S Core for their B.F.A. degree programs. Check with your department for detailed information. See also the Professional Degree Programs section below.

College Degree Requirements Prior to Fall 2003 for Continuing and Reenrolling Students

A&S Core requirements for a student continuing a degree program in effect at the time of matriculation at UW are found in the relevant previous bulletin. Contact the Dean's office with any questions.

Students who re-enter the university after an absence of a year or more should refer to other sections of this bulletin for university policies and procedures. Unless approved otherwise, reenrolling students, after a year's absence, are required to follow the University Studies and A&S Core requirements in effect the semester of their re-enrollment. However, all majors in A&S who have yet to complete the Non-Western requirement, regardless of their initial enrollment, must refer to the current list of approved courses.

Checksheets and lists of courses that satisfy A&S college core requirements are available on the Web at www.uwyo.edu/a&s or in the Dean's office.

Departments and programs in the College of Arts and Sciences may require reenrolling students to complete requirements in the major that meet the current expectations of the discipline.

Transfer Students and Acceptance of Transfer Credit

The College of Arts and Sciences and its departments reserve the right to grant transfer credit toward the bachelor's degree only for those courses where a grade of C or better was earned. Students transferring credits from a university or college outside Wyoming with questions about how courses taken elsewhere fulfill the A&S Core may contact the Center for Advising and Career Services (222 Knight Hall, 766-2398).

Courses Taken for S/U Credit

Students may include up to 20 semester credit hours in free electives with a grade of S as part of the total hours required by the College of Arts and Sciences for graduation. However, no S/U hours may be used to satisfy university and college core general education requirements or major requirements, including the required 48 upper-division credit hours unless the course is offered for S/U grading only.

Students registering in courses for S/U grades are subject to all general regulations.

Professional Degree Programs

Professional curricula are available in seven fields. A minimum of 128 hours, exclusive of credit in physical education and lower-division courses in armed forces sciences, is required. Students enrolled in professional curricula must earn a grade of C or better in the major and fulfill all other college and university requirements including at least 48 hours of course work at the upper-division level with 30 of these from UW. For some professional programs, exceptions have been made to the A&S Core requirements. Students should verify curriculum requirements with the appropriate department and/or the college dean's office. The eight professional programs consist of the following:

Art	B.F.A.
Chemistry (ACS certified)	B.S.
Microbiology	B.S.
Music Education	B.A.
Music (Performance)	B.M.
Physics Plus	B.S.
Theatre and dance	B.F.A.
Wildlife and fisheries biology and management	B.S.

Concurrent Majors

Students may pursue two or more majors simultaneously. With careful planning, A&S students may be able to use all or most of the free elective hours for requirements in the other majors. Refer also to the section, "Graduation: Requirements and Procedures" in this bulletin.

The A&S Core must be met only once by students whose primary major is in the College of Arts and Sciences. Students whose degree programs are in other UW colleges are welcome to

earn a concurrent major in A&S. These students do not have to meet the A&S Core requirements. The student earns one degree with one diploma.

Students pursuing a concurrent major must contact both departments involved for assignments to advisers.

Dual Degrees

Students may simultaneously pursue degrees in the same or more than one UW college. In addition to requirements described in the section "Graduation: Requirements and Procedures" in this bulletin, students in another UW college who wish to earn a degree from A&S must also complete the A&S Core. A&S students working on dual degrees in the A&S College need to meet the A&S Core just once. A diploma is awarded for each degree.

Second Bachelor's Degrees

For students seeking a second bachelor's degree in the College of Arts and Sciences whose **first degree is from another university**, the minimum requirements include:

- 30 semester hours earned from the University of Wyoming, 12 of which must be upper division (3XXX-4XXX level) or graduate level (credit by examination does not count as UW hours).
- Completion of the U.S. and Wyoming Constitutions requirement (V courses in the University Studies Program course list in this Bulletin).
- If the first degree is from an institution where English is not the predominant language, the Writing A and B requirements of the University Studies Program must be completed successfully.
- Students must also meet the 2003 A&S Core requirements.

For students whose **first degree is from UW:**

- The additional required 30 hours (12 of these at the 3XXX-4XXX) are added to the degree requiring the least number of hours. For example, for a first degree in a non-professional program, A&S requires 120 hours (plus the PE, physical education, hours and any lower division military science courses). So the total credits a UW student would have to complete for the second bachelor's degree is a minimum of 150 credits (plus the PE hours and lower division military science courses). Since the University requires a total of 48 upper division hours for a degree, for the second degree from A&S, a UW student would need to earn a total of 60 hours at the 3XXX-4XXX level. For more information, please see the Second Bachelor's Degree entry in the section, "Graduation: Requirements and Procedures" in this bulletin.

- Students whose **first degree is from another UW college** must meet the 2003 A&S Core requirements.
- Students whose **first degree is from one of the A&S professional degree programs with a modified A&S Core** and are seeking the second A&S degree in a non-professional degree program must complete the additional 2003 A&S Core requirements.
- Students who earned their **first degree from the College of Arts and Sciences in a non-professional degree program** have already met the A&S Core requirements. Please contact the A&S dean's office if your first degree from the UW College of Arts and Sciences was earned prior to Fall 2003 (307) 766-4106, asdean@uwyo.edu.

Distributed Majors Degree Programs

The specific requirements for majors in the humanities/fine arts, mathematics/science and social science are outlined below. Required courses in these majors are selected from several A&S departments and in some cases, outside the college. The basic college requirements are those as described above for the Bachelor of Arts or Science Programs. Appropriate courses from outside A&S may be substituted after consultation with the adviser.

Separate diplomas are awarded for each degree.

1. Humanities and Fine Arts (B.A. only)

To fulfill the 42 credit hours required in the major, the student selects three areas of emphases from the participating departments/programs with a minimum distribution of 18 hours in the first area emphasis and 12 hours in each of the two other areas. Participating departments/programs include American Studies, African American studies, American Indian studies, anthropology, art, Chicano studies, communication and journalism, English, history, modern and classical languages, music, philosophy, political science, religious studies, theatre and dance, and women's studies. See the A&S dean's office or the Web at www.uwyo.edu/a&s/current/majors.asp for approved courses and detailed checksheet.

In addition to the 42 hours in this major, students are required to take 12 hours of a single foreign language, or the equivalent (American Sign Language is acceptable). Only classics 2010 and 2020 and other language courses numbered above 2030 may be counted toward the 42 hours in the major.

The 42 credits must include:

- At least 24 credit hours of upper division courses are required in the major with a distribution of at least 12 credits in one area of emphasis and 6 credits in a second area.
- A grade of C or better must be earned in all 42 credit hours in the major and all courses must be taken for a letter grade unless offered for S/U only.

A maximum of 4 credit hours of music lessons and dance technique courses may apply.

Students may not minor in the department/program that is selected as the first area of emphasis. At least 12 hours applied toward a minor must be from courses outside each of the two other departments of emphasis.

Nine hours of upper-division courses outside the department/program of the major as required in the A&S Core must be outside the first area of emphasis and not cross-listed with courses in that department/program. These 9 hours cannot also simultaneously fulfill the USP requirements for QA, QB, P, V, SB, SE, SP, S, WA, CA, CH, CS, C, or O.

All other university and college degree requirements apply.

Students pursuing this major may go to the Department of Philosophy in Hoyt Hall for assignment to an adviser.

2. Social Science (B.A. or B.S.)

To fulfill the 48 credit hours required in the major, the student selects four core areas of emphasis from the participating departments/programs, with a minimum distribution of 15 credit hours in the first area of emphasis and 6 hours in each of the other three areas. Participating department/programs include African American studies, American Indian studies, American studies, anthropology, Chicano studies, communication and journalism, criminal justice, economics, geography, history, philosophy, political science, psychology, sociology, and women's studies. The first area of emphasis cannot be in economics or philosophy. See the A&S dean's office or the Web at www.uwyo.edu/a&s/current/majors.asp for approved courses and detailed checksheet.

The 48 credits must include:

- STAT 2010, 2050, or 2070. These also fulfill the QB requirement for the University Studies Program (USP).
- A USP-approved WC course that is also an approved College of Arts and Sciences social science discipline course.
- A minimum of 24 credit hours of upper-division courses in the major. At least one course, 3 credits, in the first area of emphasis must be at the 4XXX level.
- A grade of C or better must be earned in all 48 credit hours in the major and all courses taken for a letter grade unless offered for S/U only.

It is also recommended that students complete an upper-division social science research methods and a social science theory course. See the list of Approved courses.

Courses taken for the U.S./Wyoming Constitutions requirement do not count in the 48 credit hours in this major.

Students may not minor in the department/program that is selected as the first area of emphasis. Nine hours of upper-division courses outside the department/program of the major as required in the A&S Core must be outside the first area of emphasis and not cross-listed with courses in that department/program. These 9 hours cannot also simultaneously fulfill the USP requirements for QA, QB, P, V, SB, SE, SP, S, WA, CA, CH, CS, C, or O.

All other university and college degree requirements apply.

Students pursuing this major may go to the Center for Advising and Career Services in Knight Hall, room 222, for assignment to an adviser.

Mathematics and Science (B.A. or B.S.)

To fulfill the 48 credit hours required in the major, the student selects four core areas of emphases from the participating departments/programs, with a minimum distribution of 8 credit hours in each of the four areas. Participating departments/programs include anthropology, biology, botany, chemistry, geography, geology and geophysics, mathematics, physics and astronomy, psychology, statistics, and zoology and physiology. See the A&S Dean's office or the web at www.uwyo.edu/a&s/current/majors.asp for approved courses and detailed checklist. One of the four core areas may be outside the College of Arts and Sciences, if in a related science/math area.

The 48 credits must include:

- A minimum of 24 credits of upper-division courses must be earned across at least three of the core areas with at least 3 upper-division credits in each core area.
- A grade of C or better must be earned in all 48 credit hours in the major and all courses taken for a letter grade unless offered for S/U only.

At least 12 hours applied toward a minor must be from courses outside a core area. Nine hours of upper division courses outside the department/program as required in the A&S Core must be outside the first core department and not cross listed with courses in that department. These courses cannot also simultaneously fulfill the USP requirements for QA, QB, P, V, SB, SE, SP, S, WA, CA, CH, CS, C, or O.

All other university and college requirements apply.

Students pursuing this major may go to the Department of Mathematics for assignment to an adviser.

Self-Designed Major

The Self-Designed Major (SDM) is an option for students who want a program of study that allows them to develop intellectual interests not now addressed by traditional majors and minors. The SDM encourages diversity and flexibility while requiring a clear academic focus and a unifying purpose. Most SDMs are interdepartmental and multidisciplinary.

Program requirements. Students are admitted to the program at least 3 semesters before their anticipated graduation. They must have a GPA of 3.0 and are expected to fulfill all university and college requirements.

Application for the Program. Students first see an associate dean of the College of Arts and Sciences (113 A&S) who explains the program and helps with the application process. With the guidance of an appropriate faculty member, students prepare a three- to five-page rationale for the SDM and a specific list of courses, including a minimum of 24 hours of formal course work and 6 hours of independent study to be used to prepare a senior paper or project. Sixteen of the 24 hours of the formal coursework must be in A&S departments or programs. Students also need a letter of support from a primary faculty adviser, as well as consent from two or more additional faculty, to serve on their supervisory committee. Once the SDM Faculty Council has reviewed the application, it interviews each student and then notifies him or her of its decision. Any modifications of the program must be approved by the student's supervisory committee and the SDM Faculty Council.

Senior Project. Approximately two months before the end of his or her senior year, each student submits a project or paper which summarizes or typifies the SDM. The project is then evaluated by the supervisory committee. The supervisory committee makes a recommendation to the SDM Faculty Council which recommends the student for graduation.

Students will receive the appropriate bachelor's degree with the major shown as Self-Designed Major: _____ (name of focus).

Earth System Science Interdisciplinary Degree Program

This intercollegiate, interdisciplinary Bachelor of Science program approaches the study of the Earth as a system, integrating the atmosphere, atmosphere, biosphere, hydrosphere, and lithosphere to understand its complex interactions and prepare students to address issues of global environmental change.

In addition to ESS Core and Foundation courses in math, physics, chemistry, geographic information science, remote sensing, and biogeochemistry, students select a concentration in one of the participating departments. The current participating departments in the College of Arts and Sciences include anthropology, botany, geography, and geology/geophysics and the biology program. The college of the student's concentration department awards the degree. Students whose concentration is in one of the Arts and Sciences departments are also required to complete:

1. Eight college-level credit hours of a foreign language (American Sign Language is acceptable), or acceptable scores in AP, CLEP, International Baccalaureate, or the Modern and Classical Languages department's language placement examination.
2. An approved non-Western course which may simultaneously fulfill a University Studies requirement.

For more information, go to www.uwyo.edu/ESS or see Dr. Robert D. Kelly (rkelly@uwyo.edu) in the Engineering Building, room 6072, or contact the A&S participating departments.

Microbiology Interdepartmental Program

The Bachelor of Science degree program in microbiology is an interdepartmental major with faculty and courses from the Colleges of Agriculture, Arts and Sciences, and Health Sciences. Students may obtain their degree in either the College of Agriculture or the College of Arts and Sciences. Students who wish to earn this degree from the College of Arts and Sciences are required to complete the following A&S Core requirements:

1. Two four-credit science courses with labs and with two different prefixes.
2. One approved three-credit course in the Non-Western category.

For the major requirements, contact Program Director Ken Mills in the College of Agriculture, 766-6638/6684, kmills@uwyo.edu and the College of Agriculture section on Microbiology in this Bulletin.

Concurrent Major in Environment and Natural Resources

A student majoring in any A&S department/program may earn a double major by completing the courses required for the Environment and Natural Resource (ENR) program in addition to the requirements in their A&S major and the College A&S Core. The School of ENR Web site, www.uwyo.edu/enr/enrschool.asp has detailed information, or contact the School at (307) 766-5080.

Joint A&S/COB Curricula (4+1)

A special cooperative program for qualified undergraduates in the College of A&S is available for students interested in eventually pursuing a Master of Business Administration degree at UW. Under this program, A&S students may be able to obtain an MBA degree in one year after the completion of their undergraduate degree by taking appropriate pre-MBA electives during their undergraduate years. Students could then receive the B.A. or B.S. degree plus the MBA degree within five years, if they are accepted into the MBA program. This joint A&S/COB program gives students a minor in business and the advantage of a solid liberal arts undergraduate education and excellent employment opportunities.

The minor includes courses in decision science, math, economics, finance, management, statistics, marketing and accounting.

Participation in the 4+1 program does not imply automatic admission to the M.B.A. program. Regular application procedures are required, and existing admission criteria must be met. Students should plan to submit application materials to the graduate business programs in the College of Business during their senior year and take the Graduate Management Admissions Test (GMAT) prior to submitting their applications. Information about this cooperative program and application materials for graduate business programs are available through the MBA program, (109A College of Business, mba@uwyo.edu, or (307) 766-2449).

Preprofessional Studies

The College of Arts and Sciences prepares students to enter professional schools through preprofessional programs of study described below.

Prelaw Study. Students usually need a bachelor's degree prior to beginning the study of law. There is no prescribed course of undergraduate study and no restrictions as to the field in which the degree is earned. However, to prepare for this competitive profession, prelaw students are advised to select courses that help to develop those talents and skills essential to the study and practice of law. Logical and critical thinking, conflict evaluation/resolution and effective verbal/nonverbal communication skills are essential. Additionally, students should understand the political, economic, social and cultural institutions and values that characterize human society. Rigorous courses in any discipline increase abilities in these areas. Regardless of the prelaw major, courses in the broad liberal arts--the sciences, social sciences, fine arts and humanities--increase understanding of the public's diverse interests and backgrounds.

Prelaw students do not have to declare a major at the time of first enrollment if they wish to explore options. Students who are undeclared in the

College of Arts & Sciences are assigned advisers in the UW Center for Advising and Career Services until they decide upon a degree program.

In addition to an adviser in the major, prelaw students may contact any of the designated UW prelaw advisers for assistance in developing a program of study, for career counseling and for guidance in applying to law schools. Ilona Reif is the UW Coordinating Pre-law adviser, A&S Dean's Office, A&S 114, ireif@uwyo.edu, 766-4106. A current list of advisers is available on the Web (see below) or from the A & S dean's office. The dean's office also maintains information on the Law School Admissions Test, financial planning brochures, law school forums and fairs, as well as bulletins from law schools across the nation. A bulletin board for prelaw students is located in the south hallway, 1st floor of the A&S Building. Students are encouraged to use these resources.

An active pre-law club and undergraduate chapter of the international legal fraternity, Phi Alpha Delta, invite all prelaw students to join. For information and application forms, see the prelaw club adviser in the Department of Criminal Justice (223 A&S Building, (307) 766-2988. Additional information and useful resources may be found on the pre-law Web site, www.uwyo.edu/a&s/Current/Pre-law_information.htm.

Library Preprofessional Work. Librarians are information professionals who research, organize, and classify materials so the public can access information. Not only do they work with printed materials, but all the technological advances such as CD-ROM, the Internet, virtual libraries, and other remote access to resources. Librarianship offers many career opportunities to people of different academic backgrounds, interests, and talents. Most public, academic, and special libraries require a Master's degree in library science (MLS).

The degree programs and minors in the College of Arts and Sciences offer the variety of academic preparation expected by accredited library schools in the country. Most of the graduate schools in library science require a bachelor's degree, a good undergraduate record, and a reading knowledge of a foreign language for admission. The best undergraduate preparation includes a wide range of courses in the sciences, social sciences, and humanities along with a strong concentration in one subject area. The choice of a major will be determined by the student's academic interest and professional objective. The general education that the University Studies and the A&S Core require provide the well-rounded background graduate schools expect of their MLS candidates.

Additional information about library schools, their requirements, and programs as well as career opportunities may be obtained from the reference desk at Coe Library and the Center for Advising and Career Services. The U.S. Bureau of Labor Statistics "Occupational Outlook

Handbook" at www.bls.gov/oco/ocos068.htm has detailed descriptions of the varied work of librarians, working conditions, employment outlook, and sources for additional information.

Premedical, Predental and Preoptometry Study. Students with the most promise and the best undergraduate preparation have the competitive advantage in being admitted to these professional programs. These schools are favorably impressed by a broad educational background, including a substantial number of both non-science and science courses; therefore, students are well advised to look beyond the minimum requirements.

Students may select any major in which they are interested. In addition to completing all university, college and departmental requirements, students must include in their curriculum the basic professional school requirements such as courses in biology, chemistry, math, and physics. Professional schools have other specific requirements and students should learn about any additional recommendations from those professional schools in which they are interested. For assistance, contact the preprofessional adviser in the College of Health Sciences, 110 & 112 Health Sciences Center, (307) 766-6704 or 766-3499, or preprof.hs@uwyo.edu.

Common majors in the College of A & S for these preprofessional programs include chemistry, biology, psychology and zoology/physiology. However, there are preprofessional students in programs as diverse as theatre and dance and anthropology. Students need not declare a major immediately upon first enrollment. Advisers in individual departments can discuss options or if students wish to remain undeclared, they are advised in the UW Center for Advising and Career Services.

Preprofessional assistance is available in the Departments of Chemistry, Physics, Psychology, and Zoology/physiology. The preprofessional advisers in the College of Health Sciences have current information regarding professional school admission requirements, entrance examinations, programs in Western Interstate Commission on Higher Education (WICHE), Wyoming Medical Contract Program WWAMI (affiliated with the University of Washington School of Medicine) and financial assistance for professional education. The honor society for students enrolled in preprofessional studies, Alpha Epsilon Delta, is also administered in the College of Health Sciences. The Web site, www.uwyo.edu/preprof/ includes additional information.

Internships

Many departments in the College of Arts and Sciences offer internships for academic credit, and some provide monetary compensation. Academic internships provide practical, hands-on experience in a professional job setting as a complement to classroom instruction. An internship can provide students with both insight and preparation for future jobs. All internships require a strong background in writing, organizational ability and analytic skills. Junior or senior standing is recommended.

Special Courses (AS)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1000. Intellectual Community of Undeclared Students, Building Connections and Community. 2. [(none)♦I, L] Introduction to the intellectual community of the University of Wyoming, information literacy, and higher education in general, and is specifically intended for students who have not yet made a decision about their college major. Students will begin to develop the critical thinking skills that are necessary in higher education and to explore the primary intellectual activities of various disciplines. *Prerequisites:* none.

1100. Academic and Career Orientation. 1. Provides students with opportunity to explore areas of study available within the colleges of the university and to evaluate their own abilities, interests and skills relative to career choice. Emphasis is placed upon study skills, self-awareness, exploration of the work world and preparation for entry into a given career. Offered for S/U only. (Normally offered both semesters)

2000. Study Abroad. 1-18 (Max. 18). Students may register through the University of Wyoming for up to two semesters of academic work abroad with the approval of the academic adviser, head of the major department and coordinator of the Study Abroad Program.

2200. British Life and Culture. 3. [(none)♦G] A study of contemporary British institutions and significant aspects of the culture, with a focus on London. Offered for S/U only. *Prerequisite:* participation in London semester.

2400. Lower-Division Internship in _____. 1-12 (Max. 12). Allows students to gain hands-on experience that will help to bridge the gap between the theory of academia and the practicality of the work world. Specific arrangements must be made in advance to identify the academic component of the internship and the grading criteria. Planning will involve the internship agency, the student's academic adviser and the associate dean of the college. *Prerequisites:* sophomore standing and the approval of the adviser, head of the major department and an associate dean of A&S. (Offered both semesters)

2490. Special Topics in _____. 1-3 (Max. 6). Courses of broad general appeal and an interdepartmental flavor will be offered from time to time under this title. Permits utilization of unusual faculty expertise and provides highly-specialized and particularly pertinent, timely subject matter. See current class schedule for topics. *Prerequisite:* sophomore standing.

3100. Career Preparation and Transition. 1. Designed to help students in the College of Arts & Sciences better prepare for and achieve success in career planning and job searching. Primary purpose is to help identify possible careers and to prepare for the transition from college to career. *Prerequisites:* junior class standing and completion of WA.

3105. From Gilgamesh to the Bomb: Rules, Reasons, and Changing Communities. 3. [(none)♦I] Explores the rules by which cultures govern themselves. Examining texts and speeches, it shows approaches taken at different moment sin history and the role rational thought has played in the creation of modern societies. It highlights voices for and against change in the contemporary world and how technology helps disseminate them. *Prerequisites:* WA or equivalent, or concurrent enrollment, and permission of instructor.

4280. Chaos, Fractals and Complexity. 3. [M3♦(none)] Designed especially for non-science majors. Explores how new sciences of fractals, chaos and complexity are changing ways in which we describe, predict and understand nature and art. Topics include population models, world economy, weather, biological systems, evolution and aesthetic appreciation of art and music. *Prerequisites:* USP Math QA and QB.

4400. Upper-Division Internship in _____. 1-12 (Max. 12). Permits students to contribute in the areas of their expertise and gain hands-on experience that will help to bridge the gap between academia and the real world of work. Specific arrangements must be made in advance to identify the academic component of the internship and the grading criteria. Such planning will involve the internship agency, the student's academic adviser and the associate dean of the college. *Prerequisites:* approval of adviser, head of the major department and an associate dean of A&S. (Offered both semesters)

4500. Washington Center Internship. 1-12 (Max. 12). Affiliated with the Washington Center, a private, nonprofit, educational organization which provides comprehensive learning opportunities in the nation's capitol for both undergraduate and graduate students. Includes placement (in congressional offices, executive agencies, judicial institutions, public and special interest groups and community programs), supervision, evaluation, orientation, housing, seminars, counseling, a lecture and debate series, special events and other support services. See associate dean, College of Arts and Sciences, for details, but plan on a six-month lead time. *Prerequisite:* junior standing. (Offered both semesters)

4510. Washington Center Seminar. 3-6 (Max. 6). Taken in conjunction with the Washington Center internship program (A&S 4500). Extension of internship experience via discussion-sized groups, led by faculty who are practitioners functioning in the same contexts of action as the internship. *Prerequisite:* junior standing. (Offered both semesters)

4900. Special Topics in _____. 1-3 (Max. 6). Courses of broad general appeal and an interdepartmental flavor will be offered from time to time under this title. Permits utilization of unusual faculty expertise and provides highly-specialized and particularly pertinent, timely subject matter. See current class schedule for topics. *Prerequisite:* junior standing. (Offered based on sufficient demand and resources)

4975. Independent Study. 1-3 (Max. 6). Offers the advanced student the opportunity to pursue an individualized topic of interest with the assistance and direction of an instructor. *Prerequisites:* junior/senior standing and consent of instructor.

African American Studies

111 Ross Hall, 766-2481

Director: Gracie Lawson-Borders

Web site: www.uwyo.edu/AAST

Professor:

JACQUELYN BRIDGEMAN, B.A. Stanford University 1996; J.D. University of Chicago 1999; Professor of Law 2008, 2002.

Associate Professors:

GRACIE LAWSON-BORDERS, B.A. Michigan State University 1982; M.A. Northwestern University 1995; Ph.D. Wayne State University 2001; Associate Professor of Communication and Journalism 2006.

TRACEY OWENS PATTON, B.A. Colorado State University 1993; M.A. 1996; Ph.D. University of Utah 2000; Associate Professor of Communication and Journalism, and African American Studies 2006, 2003.

Assistant Professors:

ULRICH ADELT, M.A. University of Hamburg, Germany 2000; Ph.D. University of Iowa 2007. Assistant Professor of African American Studies 2009.

DEBORAH L. MCGRIFF, B.S. University of Nebraska-Lincoln 1976; M.S.W. University of Nebraska-Omaha 1981; Ph.D. University of Wyoming 1999; Assistant Professor of Counselor Education 2002.

Visiting Assistant Professor:

AIMEE GLOCKE, B.A. University of Wisconsin-LaCrosse 1999; M.A. University of California-Los Angeles 2001; Ph.D. Temple University 2008.

Lecturers:

KENDRA M. GAGE, B.A. University of Oklahoma 1998; M.S. 2001.

MARY GATUA, B.S. Ithaca College 2004; M.A. University of Wyoming 2007.

ROBERT W. INGRAM, B.A. University of Wyoming 2001; J.D. 2004.

GATUA WA MBUGWA, B.A. University of California Santa Cruz 1997; M.P.S. Cornell University 2001; M.S. 2003; Ph.D. University of Wyoming 2008.

The African American Studies Program, through an interdisciplinary course of study, examines the experiences of African Americans in the Western United States, in the context of Africa and its diaspora in Europe and the Americas.

African American Studies Minor

The minor in African American studies requires 21 credit hours; this includes the three-credit hour independent research. Three of those courses or (9) credit hours must include the required core courses, and the remaining courses must be at the 2000 level or higher.

The thematic tracks are recommended as a structural guide, not a requirement, to help students focus their coursework with their major.

Minor Required Courses

AAST 1000	3
AAST/HIST 2360	3
AAST 3130	3

Capstone Courses

AAST 4975	3
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Thematic Tracks

History

AAST 2140	3
AAST 3100	3
AAST 3110	3
AAST 3120	3
AAST 3400	3
AAST 3450	3

Culture & Aesthetics

AAST 2410	3
AAST 2730	3
AAST 3000	3
AAST 3010	3
AAST 3670	3
AAST 4020	3
AAST 4546	3

Politics & Law

AAST 4000	3
AAST 4400	3
AAST 4990	3

Rhetoric & English

AAST 2350	3
AAST 4160	3
AAST 4200	3
AAST 4450	3

Religion & Philosophy

AAST 2450	3
AAST 4100	3

Media Studies

AAST 4990 3

Additional Courses

AAST 1030 3

AAST 4970 1-12

AAST 4990 3

African American Studies (AAST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Introduction to African American Studies. 3. [C1↔D] Surveys African presence in America. Selected teachings are designed to give the student a concise understanding of the heritage of African people in America.

1030. Social Justice in the 21st Century. 3. [(none)↔I, D] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with AIST/AMST/WMST/CHST 1030. Enrollment preference will be given to We The People FIG students.

2140. African Societies. 3. [C2,G1↔(none)] Surveys African societies in their traditional and modern settings. Explores structure, function, and process in African social institutions (family, kinship, gender, economy, politics, education, law, and religion). Analyzes impact of Western contact of these institutions and other internal and external processes that have culminated in the present African condition. Cross listed with SOC 2140.

2350. African American Literature. 3. [C2,G1↔WB, D] Encompasses poetry, fiction, drama and autobiography from the Harlem Renaissance and earlier to present. Cross listed with ENGL 2350. *Prerequisite:* WA.

2360. African-American History. 3. Surveys African-American history in America, particularly emphasizing issues of identity, class, and progress as well as exploring African-Americans' quest for full participation in American life. Cross listed with HIST 2360.

2410. Survey of Afro-Caribbean Cultures. 3. [C1,G1↔(none)] Examines the diverse cultural dimensions of the Caribbean (e.g., music, language, religion, politics, and lifestyles) in relation to its historical retentions in West Africa. Critical study of pre and post colonialism and its affects on contemporary Caribbean society is a major emphasis. These critical paradigms also include the study of Afro-Caribbean populations in America.

2450. Traditional African Religion. 3. [C2,G1↔CH, G] Surveys traditional religions of Africa, both ancient and contemporary. Cross listed with RELI 2450. *Prerequisite:* AAST/RELI 1000.

2730. African Creativity and Ritual. 3. [C3, G1↔CA, G] In a thematic organization, explores both North African and sub-Saharan cultures, incorporating issues pertinent to art history, African American studies, religious studies and women's studies. Looks at music, dance, body language, festival, celebration, coming of age rituals, fertility rites, harvest and funerals. Cross listed with ART/ANTH 2730. *Prerequisites:* none.

3000. African American Studies in Music. 3. [C3↔(none)] Surveys African American music from its origins in Africa to current, popular jazz, rock, soul and rap forms. *Prerequisite:* AAST 1000.

3010. The African American Aesthetic. 3. [C1↔(none)] Examines interrelationship of the creative process with cultural and philosophical motifs, as well as the spiritual and the artistic amongst African people on the continent and diaspora. *Prerequisite:* AAST 1000.

3100. The African American Experience before 1865. 3. Lecture, discussion, and writing on the experience of African Americans in the United States. Begins with the northern migration of Afro-Mexicans, in the 17th Century, CE; ends with the Civil War and the emancipation of the slaves. *Prerequisite:* AAST 1000 or 3 hours in history; and WA.

3110. The African American Experience After 1865. 3. [C2↔(none)] Experience of African Americans in the United States. Begins with emancipation of slaves and traces the evolution of "black" culture and identity; construction and destruction of racial segregation, the continuing struggle for freedom. *Prerequisite:* AAST 1000 or 3 hours in history.

3120. Africa Since 1800. 3. [C2,G1↔(none)] Survey of African history from onset of the 19th century to the present. Designed to provide an introduction to the main historical themes of the African past and an understanding of some of the main issues confronting Africa today. Cross listed with HIST 3120. *Prerequisite:* 3 hours in history.

3130. Global Impact of African Cultures. 3. Examines concepts of culture and value systems as applied to Africa and African-derived cultures and the impact on civilizations around the globe. Using the lens of the Diaspora, this course examines aspects of African culture on the African continent along with the traditions, experiences, socialization, and histories that continue for dispersed peoples of African descent. *Prerequisite:* any AAST course or junior or senior standing.

3400. The Origins of African America, 1440-1807. 3. [C2↔(none)] The introduction of slavery into sugar plantations off the coast of West Africa in the 15th Century, CE; Atlantic slave trade; development of plantation societies in the "New World;" Haitian Revolution; and the end

of the legal slave trade to Anglophone America. *Prerequisite:* AAST 1000 or 3 hours of history; and WA.

3450. The Emergence of African America, 1807 to the Present. 3. [C2↔(none)] Looks, comparatively, at the slavery experience in sugar, cotton, rice, tobacco, and coffee cultures; the evolution of African American culture and society; the end of slavery; and the post-emancipation experience. *Prerequisites:* AAST 1000 or 3 hours of history; and WA.

3670. African Diaspora. 3. [C2,G1↔CS, G] Examines process through which aspects of African culture have endured in Diaspora. Analyzes social relations between Diaspora Africans and non-African populations in N. and S. America, the Caribbean, Britain, Asia and the Mediterranean. Discusses cultural hybridization as a product of culture contact. Cross listed with SOC 3670. *Prerequisite:* AMST 2110, ANTH 1200, ENGL 2190, SOC 1000, SOC 2140, any AAST course, or junior/senior standing.

4000. Quest for Civil Rights from 1619 to the Present. 3. [(none)↔CH] In-depth study of the struggle for civil rights by Afro-Americans. Emphasizes political, socio-economic and philosophical elements that shaped public policy, legislation and judicial decisions; the Civil Rights Era (1954-1968); and contemporary interpretations of Afro-American civil rights. *Prerequisite:* AAST 1000.

4020. The Black West. 3. [C1↔(none)] Historically surveys African pioneers in the west, and legacy of the Black West (i.e. the black cavalry and cowboy). *Prerequisite:* AAST 1000.

4100. African American Religious Culture. 3. [C2,G1↔WC, D] Mid-level writing-intensive seminar. Comparative study of African American religious celebration, primarily in the context of Afro-Christianity, but touching on Islam, Candomble, "Voodoo," Santeria, and Rastafarianism. Cross listed with RELI 4100. *Prerequisite:* 3 hours in African American studies or history.

4160. African American Rhetoric. 3. [(none)↔CH] African American discourse and its relationship to equality and participation. Using the struggle of African Americans as an instructive exemplar, it will come to terms with the philosophical concepts, political issues, moral complexities, and discursive characteristics of African American Rhetoric. Cross listed with COJO 4160. *Prerequisites:* AAST 1000 and AAST 3010, or COJO 1040, COJO 4210; graduate students.

4200. The Harlem Renaissance. 3. Examines the florescence of African American creativity, centered in Harlem, New York, between the end of World War I and the onset of the Great Depression. Cross listed with AMST 4200. *Prerequisites:* AAST 1000 and junior standing.

4400. Black Politics, 1867 to the Present. 3. Afro-American participation in partisan electoral politics in the United States from Reconstruction to the current presidential election. Cross listed with POLS 4400. *Prerequisites:* 3 hours 3000-level courses in African American studies or political science and WA.

4546. Agriculture: Rooted in Diversity. 3. [(none)◀C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/AIST/AMST/CHST/ENGL/FCSC/HIST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4970. Internship in AAST. 1-12. Designed for students to utilize the knowledge and skills obtained in their program of study to be applied at an organization or institution. Students will provide a job description, sign an internship contract, keep daily work journals, provide work samples, submit a paper, and include a final evaluation by their Internship supervisor. *Prerequisite:* 9 hours in AAST courses.

4975. Independent Research. 1-3 (Max. 6). Independent study in African American Studies. *Prerequisites:* AAST 1000 and consent of instructor.

4990. Topics: _____ . 3 (Max. 6). In-depth study of a topic not offered as regular course. *Prerequisite:* AAST 1000.

Aging and Human Development

The minor in Aging and Human Development will be reorganized by the College of Health Sciences. For information, contact Lisa Shipley (lshipley@uwyo.edu), in the Health Sciences Center, room 110 (307) 766-6704.

American Indian Studies

115 Ross Hall, 766-6521
Web site: www.uwyo.edu/AIST
Director: Judith A. Antell

Adjunct Faculty:
(See bulletin section following name for academic credentials.)

Adrian Bantjes, history
William Bauer, history
William Gribb, geography
Michael Harkin, anthropology
Jeanne E. Holland, English
Pamela Innes, anthropology
Angela Jaime, educational studies
Jeffrey Means, history
Caskey Russell, English

Senior Lecturer:
JUDITH A. ANTELL, B.S. Mankato State University 1970; M.A. University of California-Santa Barbara 1974; Ph.D. University of California-Berkeley 1989; Director of American Indian Studies 1993; Senior Lecturer in American Indian Studies 2000.

The American Indian Studies Program offers an academic minor. This interdepartmental course of study examines Native North American cultural and social life, including economic, political, and educational systems. Historical and contemporary perspectives of American Indian experiences are included in this program.

Students may choose an American Indian studies minor to complement a major field of study. Related disciplines include American studies, anthropology, art, ethnic studies, geography, history, law, music, philosophy, political science, and sociology. A minor in American Indian studies provides excellent preparation for teachers, researchers, social workers, health care providers, resource managers, economic developers, and legal practitioners.

Students graduating with an undergraduate minor degree in American Indian studies will be able to: 1) Explain the concept of tribal sovereignty and how tribal sovereignty is both restricted and acknowledged by the federal trust relationship and by relationships with states; 2) Understand the development of modern tribal governments and their functions and importance in contemporary society; 3) Understand and appreciate the roles of history, culture, and politics in the development of tribal world views that relate to modern life and contemporary issues of concern for Native American peoples; 4) Identify historical, cultural, and political diversity and significance in Native oral traditions and written literatures; 5) Recognize stereotypes about Native American peoples and explain why these stereotypes were created and why they are sustained in modern

society; 6) Understand historical experiences and contemporary issues in North America from the perspective of American Indian peoples.

An interdepartmental American Indian Studies Advisory Committee guides the program's development. The director advises students selecting the American Indian studies minor.

Complete information about the American Indian studies minor is found in the *American Indian Studies Program Brochure* available in the American Indian Studies Program office and on the program web site. Information about the American Indian studies graduate minor can also be found on the program web site and in the *Graduate Bulletin*.

American Indian Studies (AIST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

1001. Foundations in American Indian Studies. 3. [(none)◀CS, D] Explains the development of American Indian studies and will show how a variety of disciplines continue to inform this field and interact to facilitate the exploration of its major topics of concern, including Native histories, cultures, and contemporary lives. *Prerequisites:* none.

1030. Social Justice in the 21st Century. 3. [(none)◀I, D] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with AAST/AMST/WMST/CHST 1030. Enrollment preference will be given to "We The People" FIG students.

1350. American Indians in Contemporary Society. 3. [(none)◀CS, D] Examines social and cultural issues and concerns of American Indians both on and off the reservations. Additionally, the status of American Indian people within the dominant society and culture will be explored. Cross listed with SOC 1350.

2060. Topics. 1-4 (Max. 6). Popular and current topics in American Indian Studies.

2210. North American Indians. 3. [C2, G1◀CS, D] Comparative consideration of North American Indian culture areas at European contact period. Cross listed with ANTH 2210.

2290. History of North American Indians. 3. [C1◀CH, D] Studies American Indian history through 500 years and across the continent. Considers Indian political, social and economic continuity and change. Focuses on how Indian peoples experienced and responded to times of dramatic change. Cross listed with HIST 2290.

2340. Native American Culture and Literature. 3. [(none)◀CH] Broad cultural study of Native Americans, past and present. Emphasizes folklore and literature. Cross listed with ENGL 2340. *Prerequisite:* WA course.

2345. American Indians in Hollywood Film. 3. [(none)◀CH] Examines the ways Hollywood film has constructed various forms of racial identity for American Indians. Cross listed with ENGL 2345. *Prerequisite:* WA.

3000. Plains Culture and History. 3. [(none)◀D] An ethnohistorical study of those Native peoples inhabiting the plains region of the U.S. from prehistory to the present. Cross listed with HIST 3000. *Prerequisite:* 3 hours of AIST courses.

3300. Federal Indian Law. 3. Survey of law that applies to individual Indians and tribal governments. In particular, explores the legal relationships among, and relative jurisdictions of federal, tribal, and state governments. Specific topics include civil and criminal jurisdiction, taxation, family law, hunting and fishing, and gaming regulations. *Prerequisite:* AIST 1001 or 1350.

4000. Indians of Wyoming. 3. [(none)◀D] Examines Native American culture in Wyoming from pre-history to the 21st century. Analyzes social, political, and economic developments of Native peoples of Wyoming before, during, and after contact with Europeans. Discusses interaction between these diverse societies and explores the changing relationships between Indians and Euro-Americans through the periods after contact. Cross listed with HIST 4000. *Prerequisite:* 6 hours of HIST or 6 hours of AIST.

4020. Internship. 1-4 (Max. 4). Reflective work in American Indian studies in a practical setting. With written agreement among student, director, and sites, students work on or off campus in settings addressing such areas as politics, economics, education, law or human services affecting American Indians. Consultations, readings and writings, as well as other work as agreed in contract. *Prerequisite:* 9 hours of AIST courses.

4340. Natural Resource Management on Western Reservations. 3. Examines natural resource management techniques on western reservations. Focus is on the management and planning of water, grazing, extractive industries and forestry. Field work on the Wind River Indian Reservation is included. Cross listed with GEOG 4340. *Prerequisite:* 6 hours of 2000-level AIST courses.

4360. American Indian Women. 3. Explores the lives of American Indian women in a variety of contexts through time. Complexity and diversity of Indian women's experiences throughout history are emphasized. Concerns Indian women's lives within the reality of European American colonization and its consequences for Indian peoples. Dual listed with AIST 5360; cross listed with WMST/SOC 4360. *Prerequisite:* 6 hours of 2000-level AIST courses.

4460. American Indian Literature. 3. [C1◀(none)] Advanced critical study of the history of American Indian literature, emphasizing the authors' views of social change. Cross listed with ENGL 4460. *Prerequisite:* 6 hours of 2000-level literature courses.

4462. American Indian History to 1783. 3. Surveys the history of American Indians from the period before contact to the end of the American Revolution. Examines the various contacts between American Indians and Europeans and considers what the American Revolution meant to the continent's Native peoples. Dual listed with AIST 5462; cross listed with HIST 4462. *Prerequisite:* HIST/AIST 2290.

4463. American Indian History 1783-1890. 3. Surveys the history of American Indians during the era of westward expansion. Examines the impact of American westward movement and also the manifold changes that accompanied Indians moving west. Dual listed with AIST 5463; cross listed with HIST 4463. *Prerequisite:* HIST/AIST 2290.

4464. American Indians in the Twentieth Century. 3. Surveys the history of American Indians during the twentieth century. Examines the development of new cultural, social, and political forms that help create an American Indian identity. Dual listed with AIST 5464; cross listed with HIST 4464. *Prerequisite:* HIST/AIST 2290.

4466. American Indian Ethnohistory. 3. [W3, G1◀(none)] Surveys ethnohistorical methods and concepts and provides students concrete opportunities to use these methodologies in writing exercises. American Indian ethnohistory explores Native American experiences within their own cultural contexts. Dual listed with AIST 5466; cross listed with HIST 4466. *Prerequisite:* ANTH/AIST 2210 or HIST/AIST 2290.

4468. American Indians in the North American West. 3. One of the defining features of the North American West is the presence of American Indians. Through the discussion of varied readings and primary document research, the history of American Indians in the West is examined, with particular emphasis on the Great Plains and California. Dual listed with AIST 5468; cross listed with HIST 4468. *Prerequisite:* HIST/AIST 2290.

4492. Indian Cultures of Latin America, 15C-Present. 3. [C2, G1◀CS, G] An ethno-historical overview of Mesoamerican and Andean Indian cultures from the 15th C. to the present. Focuses on Native American responses to colonialism, capitalism, nationalism, and globalization. Recent developments, e.g., the new Indian rights movement and the Chiapas rebellion in Mexico. Cross listed with HIST 4492. *Prerequisite:* 3 hours of relevant course work in HIST (e.g., 2290, 2380, 4495, 4496) or AIST (e.g., 2210, 2290, 4100, 4465) or ANTH (e.g., 2210).

4525. American Southwest. 3. Explores the Southwest as the location of cultural encounters and conflicts. Focuses on the cross-cultural interchange between American Indians, Mexican Americans and Anglo Americans from the fifteenth century to the present. Cross listed with CHST/HIST 4525. *Prerequisite:* HIST 1210/1211, HIST 1220/1221. (Normally offered spring semester)

4546. Agriculture: Rooted in Diversity. 3. [(none)◀C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AAST/AGRI/CHST/ENGL/FCSC/AMST/HIST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4740. Native American Languages and Cultures. 3. Demonstrates the interrelationship of language and culture in several Native American communities. Examines anthropological and linguistic theories regarding language spread and the peopling of North America, narrative performance, translation, and the connection between linguistic structures and cultural features. Cross listed with ANTH 4740. *Prerequisite:* ANTH 4760.

4990. Special Topics. 1-4 (Max. 9). Current research topics presented by regular and visiting faculty. *Prerequisite:* 3 hours of AIST courses.

American Studies

Cooper House, 766-3898

FAX: (307) 766-3700

Web site: www.uwyo.edu/ams

Director: Eric J. Sandeen

Professors:

JOHN D. DORST, B.A. Oberlin College 1974; M.A. University of California-Berkeley 1977; Ph.D. University of Pennsylvania 1983; Professor of American Studies 1996, 1989.

ERIC J. SANDEEN, B.A. University of Notre Dame 1970; M.A. University of Iowa 1976; Ph.D. 1977; Director of American Studies 1982; Professor of American Studies 1994, 1982.

Associate Professor:

FRIEDA E. KNOBLOCH, B.A. Cornell University 1985; Ph.D. University of Minnesota 1994; Associate Professor of American Studies 2003.

Adjunct Faculty:

(see Bulletin section following name for academic credentials)

R. McGreggor Cawley, political science

Barbara Chatton, library science

Lewis Dabney, English

Colleen Denney, art

William J. Gribb, geography

Michael Harkin, anthropology

Beth Loffreda, English

William H. Moore, history

Philip J. Roberts, history

David Romtvedt, English

Audrey Shalinsky, anthropology

Robert Torry, English

American Studies Council:

Barbara Chatton (education)

Beth Loffreda (English)

Philip Roberts (history)

The interdisciplinary major in American studies emphasizes the integration of the humanities, fine arts and social sciences in the study of American experience, past and present. The program places special emphasis on interaction with contemporary American culture through course work, field experiences and internships so that each student can apply academic knowledge to real life circumstances. Many students choose among literature, history, geography or anthropology for their distributed course requirements, but major areas of course work may include political science, mass media, the fine arts, sociology, philosophy, or environment and natural resources. With the help of an American Studies program adviser, each student plans an individualized course of study emphasizing as academic interest, a career goal and/or preparation for further education in law or graduate school. Although the focus of the program is broad, many students choose to emphasize nature and culture in the U.S., American cultural diversity, or preparation for a career in the public sector (museums, historic sites, interpretive center, etc.).

Undergraduate Major

The interdisciplinary major in American Studies emphasizes the integration of the humanities, fine arts, and social sciences in the study of American experience, past and present. Through its **core** of American Studies courses, the program places special emphasis on interaction with contemporary American culture through course work, field experiences, and internships so that each student can apply academic knowledge to real life circumstances. With the help of an American Studies adviser, students can choose courses in almost all disciplines and fields in the College of Arts and Sciences - most typically, literature, history, geography, anthropology, sociology, art history, women's studies, political science, African American studies, American Indian studies, Chicano studies, or environment and natural resources - for their **theme** requirements. The individualized course of study proposed by each student should emphasize an academic interest, a career goal, and/or preparation for further education in law school or a graduate program. Although the focus of the program is broad, many students choose to emphasize environmental studies, American cultural diversity, secondary level teaching, or preparation for a career in the public sector (museums, historic sites, interpretive centers, etc.).

Through the following curriculum, students develop individual programs of study, with their advisers, to understand and engage American cultures.

1. Foundation (12 credits):

AMST 2010 and AMST 2110

Two of the following: AAST 1000, AIST 1350, CHST 1000, ENR 2000, (either HIST 1210 or HIST 1220), RELI 1000, or WMST 1080.

2. Concentration (27 credits)

Core. Each student must take three AMST courses at the 3000-4000 level, excluding the senior seminar. These seminars are designed to maintain an interdisciplinary view of American culture and to foster an American Studies community (9 credits).

Theme. An American Studies theme is devised, in consultation with the student's adviser, and is presented to the American Studies core faculty in writing as a proposed course of study. This proposal is usually made at the end of the second year of study (or upon completion of 60 hours of course work toward graduation), since the document guides the student through an exploration of American culture. Typical themes include: American diversity, environment and society, material culture and everyday life, visual culture and media, American cultural history, American institutions and public culture, the United States in international perspective. The theme must include a minimum of 6 credits and a maximum of 9 credits in a single discipline. Up to 3 credits can be granted for courses at the 1000-2000 level (18 credits).

3. Capstone (6 credits):

Senior seminar plus an individual project stemming from either AMST 4010 (independent study) or AMST 4970 (internship).

Students pursuing Program honors should also write an undergraduate thesis.

Internships

The internship experience is essential for students specializing in public sector American studies. The program has an active program of paid internships that can place students in work environments in Wyoming, other parts of the U.S., or in selected foreign countries.

Exchanges

The program has established semester or academic year exchanges with universities in Great Britain, the Netherlands, Denmark and New Zealand in order to encourage an international understanding of American culture. The Elaine Kay Clatterbuck Fund supports majors who are spending this valuable time abroad.

Financial Aid

The William Robertson Coe Fellowship supports undergraduate tuition. The Long-Findeisen Fund supports individual research or exhibition projects. The Elaine K. Clatterbuck Fellowship assists students engaged in an international exchange. The internship program provides students with a stipend while engaged in a program-approved internship.

Teacher Education

Teacher certification in elementary or secondary (social studies) is available by arrangement with the College of Education. Students will be assigned an adviser from the College of Education, as well as from American Studies.

Certificate

The certificate program allows students to choose from undergraduate and graduate courses in American Studies, literature, geography, music, art, history, philosophy, sociology, folklore, anthropology, American Indian studies, political science, environmental studies, and media studies. The program encompasses two semesters of full time work: a total of at least 24 semester hours, or approximately 8 courses. Of these, 6 hours (2 courses) must be selected from the following list:

AMST 2010 or 2110 3
and
AMST 4300, 5550 or 4020 3

An additional 18 hours (6 courses) are chosen in consultation with an American Studies faculty adviser. The final 3 credit hours, completed during the summer months, are devoted to an internship (AMST 4385) or field experience in American culture (AMST 4990).

Undergraduate Minor

Students may minor in American Studies through a program of 24 credits of study, some which may be matched with major requirements in related disciplines and fields. For details, see the list of eligible courses at www.uwyo.edu/ams.

Graduate Major

A description of the graduate program leading to the M.A. in American studies may be found in the *Graduate Bulletin*. The program also offers an emphasis on historic preservation. Inquire at the program office.

The late William Robertson Coe of Cody, Wyoming, and New York City made possible, through his generous endowments, both the American studies program and the School of American Studies at the university. Further information on both the undergraduate and graduate program in American studies can be obtained from the American studies director.

American Studies (AMST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Cultures Of College: Why We Are Where We Are. 3. [F1, C2↔(none)] Introduces students to backgrounds, environments, assumptions that shape our experience of higher education. Two objectives: to familiarize first-year students with college experience through inquiry into meanings of campus, and to familiarize students with interdisciplinary study.

1030. Social Justice in the 21st Century. 3. [(none)↔I, D] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical

thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with AAST/AIST/WMST/CHST 1030. Enrollment preference will be given to We The People FIG students.

2010. Introduction to American Studies. 3.

[C1,W2↔CH, WB] Introduces the interdisciplinary study of American culture. Focuses on themes, values and ideas which continue to reverberate through our cultural experience. (Offered at least once each year)

2110. Cultural Diversity in America. 3.

[C2↔CS, D] Studies processes by which individuals and groups produce, maintain and express cultural identities in the U.S. Race, gender and ethnicity are addressed, emphasizing historical roots and social context of contemporary cultural varieties. (Offered one semester each year)

3000. Cultures of Nature in the United States. 3. [C1, W2↔(none)]

Uses artistic, philosophical, historical and literary material to investigate how ideas about and representations of nature have changed over time in the U.S. Culminates in an examination of a wide range of contemporary environmental ideas within this broad historical and cultural context. *Prerequisite:* 2000-level course in one of the following departments: AMST, American history, American literature, or a 2000-level course approved for the ENR program. Cross listed with WMST 3000.

3100. Food in American Culture. 3.

[(none)↔C] An interdisciplinary exploration of food as a medium of cultural expression, social interaction, and aesthetic experience in American life, both past and present. Examines food as, among other things, a symbolic system, a vehicle of social communication, and an arena for the performance of regional ethnic, gender, etc. identities. *Prerequisite:* any 2000-level course in American Studies, or ANTH 1200.

3270. Jesus in America. 3.

Examines the interplay between American religion and American culture by focusing on representations of Jesus. Students study a wide variety of movements within American Christianity; discuss issues of pluralism, inter-religious contact, and diversity within American religion and culture; and explore relationships between religion and America's popular and elite cultures. Cross listed with RELI 3270. *Prerequisite:* USP WB course.

4010. Independent Study. 1-3 (Max. 6).

For upper division students in any major who can benefit from independent study in American Studies with minimal supervision. Dual listed with AMST 5010. *Prerequisites:* 3 hours in American Studies and approval of instructor.

4020. American Folklife. 3. Introduces materials and methods of folklife research, examining both verbal and nonverbal expressions of traditional cultures in America. Topics include material culture, belief systems, traditional events and celebrations, and folk performances of many kinds. Dual listed with AMST 5020.

Prerequisite: Any six hours from among AMST 2010, 2110, ENGL 2400, AIST 2340, AAST 2450 2730, 3000, 3010. (Offered once each year)

4030. Ecology of Knowledge. 3. Examines the development of "disciplines" and explores definitions, theories, methods and practices of interdisciplinary work. Dual listed with AMST 5030. *Prerequisite:* 3 hours in any interdisciplinary program.

4051. Environmental Politics. 3. [C2,

W3↔WC] Analyzes environmentalism as a political phenomenon. Provides a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with POLS, ENR, GEOG and REWM 4051. *Prerequisite:* POLS 1000.

4052. Federal Land Politics. 3.

Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with POLS/ENR/GEOG/REWM 4052. *Prerequisite:* POLS 1000.

4200. The Harlem Renaissance. 3.

Examines the florescence of African American creativity, centered in Harlem, New York, between the end of World War I and the onset of the Great Depression. Cross listed with AAST 4200. *Prerequisites:* AAST 1000 and junior standing.

4300. American Culture and the Public Sector. 3.

Surveys American culture studies in the public sector. Topics include history and theory of public sector humanities and social sciences; types of public sector jobs and institutions where public humanists work; and public sector work in specific disciplines, such as history, anthropology, folklore, archaeology and art history. Dual listed with AMST 5300. *Prerequisite:* 12 credits in humanities or social science courses having to do with American culture. (Offered once a year)

4500. American Civilization. 1-8 (Max. 8).

Explores various interdisciplinary approaches to the American experience, past and present. May include topical, thematic, historical, literary and cultural integrations; for a given semester, the course's precise focus will be indicated in the class schedule.

4546. Agriculture: Rooted in Diversity.

3. [(none)♦C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/AIST/CHST/ENGL/FCSC/HIST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4640. Art and Ecology. 3. [C3, W3♦(none)]

Focuses on the intersection of contemporary art with ecological concerns. Readings present philosophical, historical and cultural aspects of the art/ecology relationship; students reflect and question their own beliefs. Examples of art/artists are reviewed as well as how ecological artwork is developed. Students propose solutions and/or create art in, out of, or about the environment; local sites are encouraged. *Prerequisite:* 6 hours of ART and/or AMST or consent of the instructor.

4900. Field Studies in Historic Preservation. 1-4 (Max. 4). [C1♦(none)]

Acquaints students with current issues in historic preservation by visiting places of importance in U.S. and Europe. Agencies and institutions involved in building conservation provide specific expertise at sites visited. *Prerequisite:* 3 hours of architectural history or 6 hours of art history. (Offered based on sufficient demand and resources)

4970. Internship. 1-3 (Max. 6).

Gives undergraduate students practical experience by working on a project at a public institution, agency or educational/cultural organization. Offered for S/U only. *Prerequisites:* junior standing, 3.0 GPA, completion of AMST 2010 and 12 hours in major with 3.25 GPA minimum in major and consent of instructor.

4985. Senior Seminar. 3. [W3♦WC]

With AMST 4010 or 4970, completes the capstone coursework in AMST. Identifies a broad intellectual tradition in American Studies as foundation for student's research interests; builds a specific scholarly context appropriate to student's research; culminates in a substantial piece of written research appropriate in an identified subfield of American Studies. *Prerequisite:* senior standing in American studies or consent of program director.

Anthropology

106 Anthropology Building, 766-5136

FAX: (307) 766-2473

Web site: www.uwyo.edu/anthropology

Department Chair: Michael E. Harkin

Professors:

MICHAEL E. HARKIN, B.A. University of North Carolina 1980; A.M. University of Chicago 1984; Ph.D. 1988; Professor of Anthropology 2003, 1993.

ROBERT L. KELLY, B.A. Cornell University 1978; M.A. University of New Mexico 1980; Ph.D. University of Michigan 1985; Professor of Anthropology 1997.

MARCEL KORNFELD, B.A. University of New Mexico 1974; M.A. University of Wyoming 1982; Ph.D. University of Massachusetts-Amherst 1994; Professor of Anthropology 2008, 1996.

MARY LOU LARSON, B.A. University of Wyoming 1976; M.A. University of California-Santa Barbara 1982; Ph.D. 1990; Professor of Anthropology 2007, 1996.

LIN A. POYER, B.A. Bucknell University 1975; M.A. University of Michigan 1978; Ph.D. 1983; Professor of Anthropology 2003, 1997.

AUDREY C. SHALINSKY, B.A. University of Chicago 1973; M.A. Harvard University 1975; Ph.D. 1979; Professor of Anthropology 1991, 1980.

Associate Professors:

JAMES AHERN, B.A. Beloit College 1991; M.A. Northern Illinois University 1993; Ph.D. University of Michigan 1998; Associate Professor of Anthropology 2006, 2000.

PAMELA INNES, B.A. Bryn Mawr College 1986; M.A. University of Oklahoma 1992; Ph.D. 1997; Associate Professor of Anthropology 2007, 2001.

CHARLES A. REHER, B.A. University of Wyoming 1970; M.A. 1971; Ph.D. University of New Mexico 1978; Associate Professor of Anthropology 1985, 1978.

SARAH STRAUSS, A.B. Dartmouth College 1984; M.P.H. San Jose State University 1987; Ph.D. University of Pennsylvania 1997; Associate Professor of Anthropology 2004, 1997.

Assistant Professors:

ADAM HENNE, B.A. Drew University 1997; M.Sc. University of Georgia 2008; Ph.D. 2008; Assistant Professor of Anthropology 2008.

MELISSA MURPHY, B.A. Haverford College 1994; Ph.D. University of Pennsylvania 2004; Assistant Professor of Anthropology 2008.

TODD SUROVELL, B.S. University of Wisconsin-Madison 1995; M.A. University of Arizona 1998; Ph.D. 2003; Assistant Professor of Anthropology 2003.

NICOLE WAGUESPACK, B.A. Colorado State University 1996; M.A. University of Wyoming 1999; Ph.D. University of Arizona 2003; Assistant Professor of Anthropology 2003.

Adjunct Faculty:

Eckles, Francis, Gamst, Kunselman, Loendorf, Miller, Monaghan, Nelson, Pickering, Rogers, Shaul, Walker, Wingerd

Academic Professional Research Scientist:

Rick Weathermon

Professors Emeriti:

George C. Frison, George W. Gill

The department of Anthropology promotes the understanding of humankind from an integrated, holistic approach which examines past, present and future trends in cultural, biological and linguistic diversity and uniformity. Though the department serves undergraduate and graduate majors who will become professional anthropologists or will pursue other related careers, it also provides information to a large number of non-majors and to the larger community regarding cross-cultural issues. Furthermore, because of its commitment to the four field approach including biological anthropology, archaeology, cultural anthropology and linguistic anthropology, the department fosters among its students an awareness of the interrelatedness of scientific concepts, methods and theories, and the humanistic foundation of scientific inquiry. The Department of Anthropology prepares its students both to understand the cultural resources of Wyoming and to participate as informed citizens in an increasingly complex global community.

Graduate Degrees

The department offers programs leading to the Master of Arts and Ph.D. For further information, please consult the *Graduate Bulletin*.

Undergraduate Major

In addition to university and college requirements listed in this bulletin, anthropology majors must complete the third semester of a foreign language and a statistics course—STAT 2050 or 2070, which may count as the second quantitative reasoning course requirement. Anthropology majors must complete the science requirement with two lab science courses outside the major. Specific requirements for a B.A. in anthropology are ANTH 1100, 1200, 1300, 2000, 3300, 3310, 4010; one course from each of the following series: archaeology—ANTH 4120, 4125, 4130, 4150, 4020; cultural anthropology—ANTH 4300, 4310, 4320, 4330, 4340, 4350, 4360, 4380, 4020; linguistic anthropology—ANTH 4740, 4760, 4775, 4785, 4795, 4020; and biological anthropology—ANTH 4210, 4215, 4220, 4230, 4020. ANTH 1000, Intellectual Community in Anthropology, is recommended for anthropology majors, although not required. Courses in the major must be completed with a grade of C or better.

Undergraduate Minors

The minor for non-anthropology majors requires two of the introductory courses: ANTH 1100, 1200, 1300, 2000, and 11-12 hours of electives from 2000, 3000, or 4000-level anthropology courses with no more than 3 hours at the 2000-level. See the anthropology web site for more details.

Teacher Education

Anthropology courses may be used to complete part of the requirements for teacher certification in social studies.

Anthropology (ANTH)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Intellectual Community in Anthropology. 1-3 (Max. 3) [(none)↔I] Orients students to the major and UW facilities important to academic success. In addition, skills such as critical thinking are emphasized through reading and discussion of articles on anthropological questions. Faculty panels introduce students to a variety of current topics in anthropology. *Prerequisite:* available to first or second semester freshmen through controlled enrollment. Students in ANTH, HIST and other social sciences have priority.

1100. Introduction to Biological Anthropology. 4. [C2, G1↔SB] Basic concepts relating to the origin, evolution and biological nature of the human species.

1200. Introduction to Cultural Anthropology. 3. [C2, G1↔CS, G] Introduction to foreign, especially non-western, cultures through anthropological concepts, films and ethnographies.

1300. Introduction to Archaeology. 3. [C2, G1↔CS, G] Explores ways in which prehistoric material remains can provide an understanding of the cultural way of life. General background in archaeological method and theory is used to examine case studies from throughout the world, based on themes such as ceramic technology and artistry development, growth of early civilizations and North American prehistory.

1450. World Archaeology. 3. [(none)↔CS, G] World Prehistory. Recommended for non-majors. A survey of the archaeology of Africa, Asia, Europe, Australia, and the Americas from the evolution of humans to the origins of agriculture to the rise of civilizations such as that of Egypt, China, and Mexico.

2000. Introduction to Linguistic Anthropology. 3. [(none)↔L] Demonstrates the interrelationship of language, human biology, and culture at the introductory level. Linguistic anthropological methods and theories are used to examine linguistic behaviors used throughout the world. *Prerequisite:* ANTH 1100, 1200 or 1300.

2200. World Culture. 3. [C2, G1↔CS, G] Provides an understanding of cultural behavior of people in various geographical areas of the world. Students read ethnographies, cultural descriptions of societies, written by cultural anthropologists. (Normally offered at least once a year)

2210. North American Indians. 3. [C2, G1↔CS, D] Comparative consideration of North American Indian culture areas at European contact period. Cross listed with AIST 2210. (Offered based on sufficient demand and resources)

2730. African Creativity and Ritual. 3. [C3, G1↔CA, G] In a thematic organization, explores both North African and sub-Saharan cultures, incorporating issues pertinent to art history, African American studies, religious studies and women's studies. Looks at music, dance, body language, festival, celebration, coming of age rituals, fertility rites, harvest and funerals. Cross listed with AAST/ART 2730.

3015 [2015]. Introduction to the Music of the World's Peoples. 3. [W2, C3, G1↔WB, G] Introduces music of the world's peoples. Students actively study and document living musical traditions and hear, research and study music from a wide variety of geographical areas of the world. Cross listed with MUSC 3015. *Prerequisite:* MUSC 1000.

3300. Ethnographic Methods in Anthropology. 3. [W2↔WB] Introduces anthropology majors to ethnographic fieldwork, the fundamental method in cultural anthropology. Students conduct fieldwork and discuss research problems including ethics and the role of the researcher. Open to students in related fields of humanities and social sciences. *Prerequisite:* ANTH 1200. (Normally offered fall semester)

3310. Introduction to Anthropology Research Methods. 3. [M3↔(none)] Introduces anthropology majors to use of the discipline's scientific method through problem formation, research data acquisition and research techniques used by anthropologists. *Prerequisite:* ANTH 1100, 1200, and 1300. (Normally offered spring semester)

3400. Hunters and Gatherers. 3. [C2, G1↔(none)] Describes cultural adaptation of hunter-gatherer societies using both the ethnographic and archaeological record from the Arctic to tropical jungles. *Prerequisite:* ANTH 1100, 1200, or 1300. (Offered based on sufficient demand and resources)

3420. The Anthropology of Global Issues. 3. Using anthropology's long-term, holistic and comparative approaches, the course examines key global issues, e.g., poverty, war, disease, environmental degradation, and terrorism from an anthropological perspective. Cross listed with INST 3420. *Prerequisite:* ANTH 1200.

3500. Sociology of Gender. 3. [W2, C1↔WB] Investigates causes and consequences of gender construction within social institutions such as family, government, education, religion, and economy. Analyzes social structural factors affecting support for gender differentiation, e.g.

social values, position in hierarchies of control, access to paid employment, and gendered life experiences. Examines differences by race, social class and sexuality. *Prerequisite:* SOC 1000 or junior/senior standing. (Normally offered once a year)

3600. Archaeological Sciences. 3. Examines the biological, chemical and physical analytical methods used to reconstruct ancient human behavior. Includes radiometric and other dating methods, analysis of DNA and other organic molecules, stable isotope analysis of bone and sediments to reconstruct diet, environment, and migrations, trace elements for sourcing materials, and remote sensing. *Prerequisite:* completion of USP science requirement.

4000. Conference. 1-4 (Max. 4). Guided independent study. *Prerequisites:* senior standing and 15 hours in anthropology. (Offered based on sufficient demand and resources)

4010. History of Anthropological Thought. 3. [W3↔WC] Designed as the capstone course for senior majors. Surveys anthropological theory development. Explores major trends and their relationships. *Prerequisites:* ANTH 1100, 1200, 1300, 3300, and 3310. (Normally offered spring semester)

4015. Archaeological Theory and Method. 3. Introduces the students to past and present archaeological theories through a literature survey of significant topics. Addresses questions, such as: How do archaeologists identify and solve problems? What do they perceive to be problems? What is the logic of archaeological arguments? Dual listed with ANTH 5015. *Prerequisites:* ANTH 1200, 1300, 3310, and at least one 4000 regional course.

4020. Seminar. 3-6 (Max. 6). Considers current topics of anthropological interest. May be repeated for a maximum of 6 hours credit when the subject matter of the seminar is different. *Prerequisite:* ANTH 1100, 1200, or 1300. (Offered based on sufficient demand and resources)

4110. Zooarchaeology I. 3. Introductory level seminar in the archaeological analysis of faunal materials. Emphasis is on identification and curation of bones from archaeological and Late Pleistocene paleontological contexts, including their use in the interpretation of prehistoric and historic human behavior, the investigation of paleoenvironmental conditions and paleoecological relationships and problem-oriented taphonomic research. Dual listed with ANTH 5110. *Prerequisite:* ANTH 1300.

4111. Zooarchaeology II. 3. Advanced level seminar in the archaeological analysis of faunal materials. Emphasis is on study of bones as an integrated component of basic archaeological research, including their use in the investigation of paleoenvironmental conditions and paleoecological relationships as well as problem-oriented taphonomic research, and the interpretation of human behavior. Dual listed with ANTH 5111. *Prerequisite:* ANTH 4110/5110.

4115. Lithic Analysis. 3. An overview of the analysis of stone tools and waste flakes from archaeological sites. Emphasizes appropriate use of typology and methods of debitage analysis. Dual listed with ANTH 5115. *Prerequisites:* ANTH 1300 and 9 additional hours in anthropology.

4116. Advanced Lithic Analysis. 3. An in-depth consideration of a single or limited range of topics in lithic analysis, or a group project focused on a case study. Dual listed with ANTH 5116. *Prerequisite:* ANTH 4115.

4120. North American Archaeology. 3. Studies North American prehistory from the earliest evidence to historic times. Dual listed with ANTH 5120. *Prerequisite:* ANTH 1300. (Normally offered every third semester)

4125 [4100]. Northwestern Plains Prehistory. 3. Northwestern Plains archaeology from the Paleoindian period to historic contact. A review of important sites and artifact types, ongoing UW research projects, regional and other expressions of ideology, Native American ethnohistory and contemporary perspectives, and historic preservation issues. Dual listed with ANTH 5125. *Prerequisite:* ANTH 1300. (Normally offered every third semester)

4130. Old World Archaeology. 3. Surveys major archaeological sequences of the Old World. Dual listed with ANTH 5130. *Prerequisite:* ANTH 1300. (Normally offered every third semester)

4135. Quantitative Methods in Anthropology. 3. A consideration of the use of quantitative methods in anthropological research, including descriptive and inferential statistics, pattern search, mathematical modeling and computer simulation. Dual listed with ANTH 5135. *Prerequisite:* STAT 2070 or equivalent.

4140. Field Work in Wyoming Archaeology. 2-6 (Max. 6). Summarizes Northwestern Plains prehistory, as well as practical and theoretical training in archaeological field methods. *Prerequisite:* ANTH 1300, or 4125. (Normally offered summer session)

4150. Seminar in Prehistory. 1-3 (Max. 9). Covers the prehistory of a specified region or time period within that region. Emphasizes learning prehistoric sequences, material culture, and research questions associated with the topic. Topics include, but are not limited to, Paleoindian, Archaic, Siberian, Northern Plains, Great Basin, Rocky Mountain, or Southwestern Archaeology. Dual listed with ANTH 5150. *Prerequisite:* ANTH 1300.

4160. GIS in Anthropology. 4. Introduction to how and why geographic information systems (GIS) are used in anthropology. Considers: 1) background, definitions, and concepts of geographic data and GIS; 2) Anthropological and archaeological approaches to GIS; and 3) hands-on experience with GIS applications in archaeology through demonstrations, lectures, and structured inquiries. Dual listed with ANTH 5160. *Prerequisites:* ANTH 1200, 1300, and 3310.

4170. Geoarchaeology. 3. Introduces students to theory and method in geoarchaeological research. Emphasis is placed upon geomorphical processes of archaeological site formation and paleoenvironmental reconstruction. Dual listed with ANTH 5170. *Prerequisite:* ANTH 1300.

4190. Public Archaeology. 3. A consideration of archaeological legislation, policies and regulations; compliance, heritage, and avocational archaeology, cultural resource management; curation; and professional archaeological ethics. Dual listed with 5190. *Prerequisites:* none.

4210. Human Osteology. 3. Provides a detailed study of the human skeleton. *Prerequisite:* ANTH 1100. (Normally offered spring semester)

4215 [4200]. Evolution and Hominid Fossils. 3. Surveys hominid fossil record in context of evolutionary process, stressing structure-function and the dynamics of adaptive responses. Dual listed with ANTH 5215. *Prerequisite:* ANTH 1100. (Normally offered every third semester)

4220. Human Variation. 3. Studies age and sex differences, as well as race as a biological phenomenon. Includes origin and distribution of human races and adaptive significance of racial traits. Dual listed with ANTH 5220. *Prerequisite:* ANTH 1100. (Normally offered every third semester)

4230. Forensic Anthropology. 3. Introduces methods and purposes of physical anthropology as applied in human identification for law enforcement agencies. Cross listed with CRMJ 4230. Dual listed with ANTH 5230. *Prerequisite:* ANTH 1100. (Normally offered fall semester of odd-numbered years)

4240. Forensic Anthropology Laboratory. 2. Studies details of advanced osteometric procedures, particularly as applied to problems of human skeletal identification. Dual listed with ANTH 5240. *Prerequisite:* ANTH 4210. (Offered based on sufficient demand and resources)

4300. Anthropology of Religion. 3. Provides a comparative anthropological study of religious systems, emphasizing analysis of symbolism, myth and ritual. Dual listed with ANTH 5300. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4310. Environmental Anthropology. 3. Addresses how human societies interact with their surroundings, emphasizing cultural understandings of the environment. Introduces variety of theoretical and methodological approaches to topics ranging from problems of the American West to global environmental change. Dual listed with ANTH 5310. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4315. Human Behavioral Ecology. 3. Critically examines the evolutionary paradigm in anthropology, from the 19th century to current manifestations of neoevolutionism, with emphasis on behavioral ecology as it is applied to hunting and gathering societies. Dual listed with ANTH 5315. *Prerequisites:* ANTH 1100, 1200, and 1300.

4320. Political Anthropology. 3. Encompasses theories and descriptions of relationships between power and society in both less formal tribal contexts and more highly structured political institutions. Dual listed with ANTH 5320. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4325. Symbolic Anthropology. 3. Teaches several anthropological approaches to symbolic and cultural analysis, while reading ethnographic examples of how symbolic analysis can be used to understand different cultures. Coursework assumes a basic knowledge of social science concepts. Dual listed with ANTH 5325. *Prerequisite:* ANTH 1200 or SOC 1000.

4330. Social Organization. 3. Provides theories of social organization, interrelations of social institutions, and current anthropological methods of interpretation. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4340. Culture Change. 3. Examines representative theories of change, factors involved, dynamics of modernization and applied anthropology. Dual listed with ANTH 5340. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4350. Medical Anthropology. 3. Understandings of health and illness vary widely. Taking a comparative historical approach, examines how an individual's interactions with sociocultural and physical environments influence the experiences of health and illness. Topics include symbolic healing, biomedicine as a cultural system, disease and international development, global politics of AIDS and other pandemics. Dual listed with ANTH 5350. *Prerequisite:* ANTH 1200 or SOC 1000.

4360. Psychological Anthropology. 3. Introduces methods and theories anthropologists use to analyze personality, socialization, mental illness and cognition in non-western societies. Dual listed with ANTH 5360. *Prerequisite:* ANTH 1200. (Normally offered every third semester)

4380. Visual Anthropology. 3. Offers anthropological interpretation of visual representations and media, including analysis of the development of ethnographic films and their contemporary use. Visual representations of many cultures as well as mainstream United States examples are analyzed. Dual listed with ANTH 5380. *Prerequisite:* ANTH 1200.

4740. Native American Languages and Cultures. 3. Demonstrates the interrelationship of language and culture in several Native American communities. Examines anthropological and linguistic theories regarding language spread and the peopling of North America, narrative performance, translation, and the connection between linguistic structures and cultural features. Dual listed with ANTH 5740; cross listed with AIST 4740. *Prerequisite:* ANTH 2000 or 5760.

4760. Linguistic Anthropology. 3. Demonstrates interrelationships between language, human biology, and culture. In particular, the relevance of the study of language to biological anthropology, archaeology, and cultural anthropology is emphasized. Examines classic approaches in anthropological linguistics and recent controversies such as the origin of language in human evolution. Dual listed with ANTH 5760. *Prerequisites:* junior or senior status and appropriate background in anthropology and foreign language study.

4775. Language and Gender. 3. Investigates the relationship between language use, linguistic categories, and gender categories. Examines the linguistic practices involved in the formulation, discussion, and performance of gender categories in a number of different cultures. *Prerequisite:* ANTH 1200, 2000. Cross listed with WMST 4775.

4785. Language and Racism. 3. Explores the ways in which racist ideology and socially-based racial categories are reinforced and changed through language and linguistic usage. The forms of language used in the construction of covertly and overtly racist communication, and the media through which racism is communicated also will be investigated. *Prerequisite:* ANTH 1200 or 2000.

4795. Language Change. 3. Considers how languages change over time, due to both internal and external forces. The effects of language contact, borrowing, and structural change are discussed. The use of linguistic data for questions of migration and cultural contact are also explored. Dual listed with ANTH 5795. *Prerequisite:* ANTH 2000.

4970. Internship 1-12 (Max. 12). Allows students to gain hands-on experience, bridging the gap between anthropology as an academic discipline and anthropology as practiced in museums, public archaeology agencies, non-governmental organizations, and private consulting companies. Involves a required academic component in addition to work experience. Internship credit cannot fulfill requirements of the major. *Prerequisites:* anthropology major of junior/senior standing and consent of internship director and/or department head.

4975. Undergraduate Practicum in Anthropology. 1-4 (Max. 6). Affords students the opportunity to extend research projects in field or lab locations and receive additional credit for their work. Students sign up for these hours only in conjunction with another course and with the instructor's consent. *Prerequisites:* 9 hours in anthropology, consent of instructor.

Art

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FAX: (307) 766-5468

Web site: www.uwyo.edu/art

Department Head: Ricki Klages

Professors:

COLLEEN DENNEY, B.A. Louisiana State University 1981; M.A. 1983; Ph.D. University of Minnesota 1990; Professor of Art 2005, 1990.

MARK RITCHIE, B.F.A. University of Kansas 1986; M.F.A. Indiana University 1990; Professor of Art 2007, 1995.

Associate Professors:

LEAH HARDY, B.F.A. Kansas University 1987; M.F.A. Indiana University 1990; Associate Professor of Art 2009, 2002.

MARGARET HAYDON, B.F.A. Oberlin College 1977; M.F.A. San Francisco State University 1989; Associate Professor of Art 2002.

RICKI KLAGES, B.F.A. University of Arizona 1984; M.A. University of New Mexico 1991; M.F.A. 1993; Associate Professor of Art 2003, 1996.

Assistant Professors:

ASHLEY HOPE CARLISLE, B.F.A. University of South Mississippi 1997; M.F.A. University of Georgia 2002; Assistant Professor of Art 2003.

ELIZABETH HUNT, B.A. Rhodes College 1993; M.A. University of Missouri-Columbia 1996; Ph.D. 2004; Assistant Professor of Art 2006.

DOUG RUSSELL, B.F.A. Columbia College 1990; M.A. University of Iowa 1995; M.F.A. 1996; Assistant Professor of Art 2005.

JENNIFER VENN, B.F.A. Fort Hays State University 2004; M.F.A. 2007; Assistant Professor of Art 2007.

Academic Professional Lecturer:

PATRICK KIKUT, B.F.A. University of Colorado 1990; M.F.A. University of Montana 1994.

Professors Emeriti:

Deaderick, Edwards, Evans, Flach, Forrest, Reif, Russin (Distinguished Professor of Art), Schaefer

The department of Art supports the creative, aesthetic and cultural development of students within the university community and serves the cultural and educational needs of the state. The department is dedicated to preparing its graduates to assume leadership positions in their professional lives while maintaining an inner commitment to the aesthetic standards of their chosen discipline.

The department fosters a unique combination of innovation, tradition, aestheticism and practicality, by providing a professional visual arts education built on a strong University Studies Program (USP) foundation.

Undergraduate Major

The department offers course work leading to the B.A. and B.F.A. degrees in art. Based on their goals and career plans, students in consultation with a faculty adviser select the appropriate degree plan. Students major in art and declare an emphasis in one or more of the following areas:

- Drawing
- Painting
- Printmaking
- Ceramics
- Sculpture

A concentration in Art History is available, please contact the department for more information. Students may also declare an art major with a concentration in graphic design.

B.F.A. Degree. The B.F.A. program is available for students who are interested in advanced studies in studio and art history in preparation for graduate studies or professional careers. The B.F.A. degree offers additional time and instruction for further development of studio work and research in art history beyond the B.A. degree. B.F.A. candidates prepare an exit portfolio, present a solo exhibition before graduation, and create a formal committee of faculty (2-3) from the department and the university as part of a senior thesis committee. Portfolio approval, a 3.0 GPA minimum and a favorable review during the second semester of sophomore standing in the major are required for acceptance into the program. Students are eligible to apply after they have completed ART 1005, 1110, 1120, 1130, ART 2300 or 2305, and at least one course from the studio core hours. At least 58 hours of the total 128 hours required for the B.F.A. degree must be taken in non-art courses in the USP and elective offerings. The department requires a cumulative GPA of 3.25 or better for the B.F.A. degree.

B.A. Degree. The B.A. degree is available to students who are preparing for further studies or careers in the arts and arts-related fields, such as art education, graphic design, art therapy, medical illustration, botanical illustration and forensic illustration. Students work with their academic advisers to select courses from the USP and elective offerings to complement art studies in their areas of interest. Students must earn a grade of C or better in all courses taken to satisfy department requirements. Courses in the major must be taken for a letter grade.

Art/Art Education Concurrent Major.

Through a cooperative agreement between the Art Department and the program of Art Education, all Art Education students will concurrently complete a major in Art. The Art degree requirements are essentially the same as for all other Art majors; however, specialized advising is available to ensure that students select programs that are both efficient and beneficial to their ultimate career goals.

Transfer Residency. A minimum of 26 hours of upper-division course work in the major is required to establish residency in the department for all transfer students. This applies to students in the B.F.A., B.A., and Art Education degree programs who transfer in 12 or more hours of art courses for the major. Students in all art programs must meet the university requirement of at least 48 hours of course work at the upper-division level (3000 and above).

Minimum Course Requirements for Art Majors. In addition to the university and college requirements listed in this bulletin, all students majoring in art must complete the following:

Foundation Core	14
ART 1005 Drawing I	3
ART 1110 Design I	3
ART 1115 Digital Media.....	1
ART 1120 Design II	3
ART 1130 Design III.....	3
ART 2305 Metal/Plaster.....	1
Art History Core*	9
ART 2010 Survey I	3
ART 2020 Survey II	3
Advanced Art History Course	3
*Before beginning the art history core in the sophomore year, majors should fulfill a Cultural Context USP requirement in the freshman year with one of the following: HIST 1110, 1120, 1320 or 1330.	
Studio Core (minimum)	9
ART 1310 Sculpture I	3
ART 2005 Drawing II	3
ART 2210 Painting I.....	3
ART 2110 Typography	3
ART 2410 Ceramics I or.....	3
ART 2420 Ceramics II	3
ART 3510 Printmaking.....	3
Upper Division Art Electives (minimum)	
BA Studio. (3000+).....	10
BFA Studio. (3000+).....	12
BFA Art History (3000+).....	6

ART 1005, 1110, 1120 and 1130 are considered an important preparation and prerequisite for drawing, painting, printmaking, ceramics, sculpture and graphic design courses and are required freshman courses for the major. Majors must complete the foundation core hours before electing upper-division courses in any studio area. ART 2010, 2020, 2300 and 2305 are required sophomore courses.

Once sophomore majors complete course prerequisites, they select a minimum of three courses from the studio core hours. Most of the university and college requirements should be completed as early as possible before the senior year. The department will enforce published prerequisites for courses.

Art majors must submit a portfolio for evaluation before proceeding to intermediate and advanced studios beyond the required studio core. Any student whose portfolio is assessed as deficient must address the deficiencies before receiving permission to advance in the major.

Please note: Students who do not pass the portfolio review will be able to resubmit the following semester. However, if students fail more than once, they will be unable to progress in the department of art and may be asked to transfer to another department or UW college. Portfolio evaluation will occur once in each of the fall and spring semesters.

Art Concentrations. In choosing art electives, students (in consultation with their department adviser) may select from a full range of art course work either broadly based or with concentration in the areas of painting, drawing, printmaking, sculpture, ceramics or graphic design. In the Humanities/Fine Arts Distributed Major degree program, students may declare a concentration in art history. In the B.F.A. degree program, students may declare a concentration in drawing, painting, printmaking, sculpture or ceramics.

Graphic Design Option. Graphic designers explore a variety of communication issues that deal with diverse messages and audiences.

Students interested in pursuing a professional career in graphic design and visual communication may elect a required sequence of courses for the B.A. degree in art with a concentration in graphic design. Students planning to graduate in four years must begin the sequence in the second semester of the freshman year.

Graphic Design Core	
ART 2110 Typography	3
(Spring only)	
ART 2120 Graphic Design I.....	3
(Fall only)	
ART 3110 Computer Graphics I.....	3
(Spring only)	
ART 3120 Graphic Design II.....	3
(Fall only)	
ART 4110 Computer Graphics II	3
(Spring only)	
ART 4120 Senior Projects in Design.....	3
(Fall only)	
ART 4400 Internship.....	6

Internships. Internships are an important aspect of the graphic design concentration. Students in all concentrations may elect internship placements in the slide library, Department of Theatre and Dance or UW Art Museum, or in the appropriate academic or administrative unit across campus. Placements are also available in state and local arts agencies and institutions during the semester and summer. National placements are likewise reviewed and approved.

Visual Communications Center. The graphic design/visual communication area provides students with a “human centered” approach to learning that challenges and nurtures them to think conceptually and prepares them to be flexible in an international community that is continually being influenced by new ideas, tools and technology.

The visual communications center is a facility for undergraduate research that functions as a classroom, studio and high-end technology space and incorporates industry standard tools for graphic design, computer graphics and digital art exploration.

Department Policy. An art class may require additional meeting times, so that students may fully participate in the Visiting Artist Program and the UWAM lecture series.

As a matter of policy, the art department reserves the right to retain any works created by students it deems worthy for the purposes of exhibition until the end of the academic year.

The art department studios are the primary instructional classrooms. As a matter of policy, access to the studios and use of the equipment is reserved for students who are formally registered for scheduled courses and are following a prescribed curriculum.

Scholarships. The department has several scholarships for qualified students at all stages in the program. See Department of Art for a full list of scholarships.

Academic and Career Advisement. Faculty advisers work closely with art students to guide and direct their progress through the declared degree program and course of study. Through the visiting Artist Program, the UW Art Museum and internship placements, the department provides numerous opportunities and role models for a professional life in the visual arts. Through consultation and discussion with faculty advisers, art students consider their interests and abilities in relation to the many and varied careers in the arts and art related fields. Many graduates go directly into industry, on to pursue graduate studies or take the next step in their career plan. On a competitive basis upon graduation, majors may participate in the Post Bac Program where they prepare a portfolio for graduate school and gain additional experience in the studio and the classroom setting.

Graphic Design, Studio, Art History Minor

A minor is offered in graphic design, all studio areas and in art history. Further information may be found on the department’s web site.

Art (ART)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. General Art: Studio. 3. [C3, G1↔(none)] Introduces art to give beginners practical appreciation through design activities applied to different media. Covers supplementary aspects by lectures and demonstrations concerning art history, drawing, crafts and others. For non-art majors only. (Offered based on sufficient demand and resources)

1005. Drawing I. 3. [(none)↔CA] A foundation level drawing course introducing fundamentals of observation, artistic invention, and basic principles of perspective and composition through problems in still life, landscape, and live model. Lectures, drawing sessions, and critiques develop formal, conceptual, and technical understanding of the drawing process.

1010. General Art: History. 3. [C3↔CA] Introduces issues affecting major arts of the world from prehistory to the early 20th century, emphasizing painting, sculpture and architecture of Western civilization. For non-art majors only. (Offered based on sufficient demand and resources)

1110. Foundation: Two Dimensional. 3. First in a sequence of three foundation courses that investigate the fundamentals of design. Basic aesthetic/formal concepts and conceptual approaches are covered through a variety of two-dimensional mediums. Structured critiques are employed to provide students the experience of assessing formal, conceptual, and technical aspects of art. (Normally offered fall semester)

1115. Digital Media. 1. [(none)↔I] An introductory level course designed to investigate the role of digital media in visual literacy. Students gain practice with basic graphics software, explore using the Internet in informing the development of art work, and discuss how application of these skills are used in classroom, studio, and commercial art fields. *Prerequisites:* none.

1120. Foundation: Three Dimensional. 3. Second in a sequence of three foundation courses that investigate the fundamentals of design. Basic aesthetic/formal concepts and conceptual approaches are covered through a variety of three-dimensional mediums. Structural form is emphasized in various contextual settings. Structured critiques are employed to provide students in the experience of assessing formal, conceptual, and technical aspects of art. *Prerequisite:* ART 1110 or concurrent enrollment. (Normally offered spring semester)

1130. Foundation: Color Theory. 3. Third in a sequence of three foundation courses that investigate the fundamentals of design. Explores color theories based on the color wheel/light spectrum including hue, value, chroma, and aesthetic color relationships. Optical color, emotional/psychological color, and color symbolism are also covered. Structured critiques are employed to provide students the experience of assessing formal, conceptual, and technical aspects of art. *Prerequisite:* ART 1110 or concurrent. (Offered based on sufficient demand and resources)

1310. Introduction to Sculpture. 3. [C3↔(none)] Introduces fundamentals of sculpture as a process of three-dimensional expression. Students explore various media, techniques and concepts through a series of assigned and open projects. Emphasis on traditional methods and formal abstract elements of sculpture are encouraged, leading to an understanding of both classic and modern concepts of form. *Prerequisites:* ART 1110, 1120.

2005. Drawing II. 3. An intermediate level drawing course building upon fundamentals of observation, artistic invention, perspective and composition through problems in still life, landscape, explorations in wet and dry media, and color with pastels. Lectures, drawing sessions, and critiques develop formal, conceptual, expressive and technical understanding. *Prerequisite:* ART 1005.

2010. Art History I. 3. [C3↔CA] First semester of a one-year survey. Studies ancient, medieval, renaissance and modern art with special reference to various social, economic and historic factors which motivated and conditioned the aesthetic forms. Includes ancient, medieval and early renaissance periods. ART 2010 and 2020 are required of all art majors and should be taken in sequence. *Prerequisites:* HIST 1110, 1120, 1320 or 1330 or any of the following: ANTH 1200, 1300, 1450, MUSC 1000; RELI 1000; THEA 1000; HP 1020, 1151; ARE 3030; and successful completion of WA. (Normally offered spring semester)

2020. Art History II. 3. [C3↔CA] Second semester of a one-year survey. Studies European/American Art from the Renaissance through Contemporary with special emphasis and historical factors which motivated and conditioned the aesthetic forms. Covers Renaissance, Baroque, Rococo, 18th Century, 19th Century, Early Modernism and Contemporary Art. ART 2010 and 2020 are required of art majors and should be taken in sequence. *Prerequisites:* HIST 1110, 1120, 1320, 1330; or any of the following: ANTH 1200, 1300, 1450, MUSC 1000; RELI 1000; THEA 1000; HP 1020, 1151; ARE 3030; and successful completion of WA. (Normally offered spring semester)

2112 [2120]. Graphic Design. 3 (Max. 6). Explores techniques of graphic design preparation from concept through paste-up to the printed page, both on and off the computer. Problems include stationery, brochures, posters and corpo-

rate images. Graphic design history is referenced and researched. *Prerequisite:* ART 1110. (Offered fall semester)

2122 [3110]. Computer Graphics. 3 (Max. 9). Develops hands-on understanding of how visual elements and text are created and manipulated on current graphic design software programs used in the field. Explores techniques of basic graphic design preparation on the computer. Problems are given in various software applications. Uses graphic design problems as technical examples of production. Laboratory/lecture. *Prerequisite:* ART 2112. (Normally offered spring semester)

2210. Painting I. 3. Introduces problems in painting, developing skill, techniques and concepts. *Prerequisite:* ART 1005, 1110, and 1130; ART 1120 may be taken concurrently. (Offered fall and spring semesters)

2305. Techniques: Wood/Plaster. 1. Studies by basic techniques, processes and skills as they apply to the fabrication of wood and plaster art forms. Emphasizes technical aspects of these media rather than completion of artistic problems. (Offered fall semester)

2350. Metalsmithing I. 3. Introduces basic technical approaches to fabricating small scale, non-ferrous metals (silver, copper, brass, nickel) including sawing, soldering, filing, drilling, form raising/pressing, texturing, and finishing processes. Investigation into the rich history of metalsmithing as well as innovative contemporary applications – sculpture and as body ornamentation – is fostered. A variety of individual projects in a studio environment alone with critical discussion and presentation addresses aesthetic, conceptual and technical aspects of metalsmithing. *Prerequisite:* ART 1120.

2410. Ceramics I. 3. Introduces ideas about ceramic form through various handbuilding construction techniques. Emphasizes design and conceptual development. Includes glaze application, surface decoration and kiln operation.

2420. Ceramics II. 3. Introduces ideas about ceramic form through wheel-throwing techniques. Emphasizes design and conceptual development. Includes glaze testing, glaze application, surface decoration and kiln operation. (Normally offered fall and spring semester)

2430. Combined Clay Methods. 3. A basic course in ceramics designed to introduce handbuilding and wheel throwing in one semester. The emphasis will be on developing an understanding of basic clay forming methods; developing surface treatments including slip, glaze and stains with an emphasis on low fire techniques, and understanding electric kiln firing and operation. *Prerequisites:* none.

2720. Introduction to the Classical Art and Culture of Islam. 3. [C1, G1↔(none)] Studies art, history, religion and culture of Islamic Middle East from the time of Prophet Muhammad to the rise of the Mongols (i.e., ca. 600–1250 AD). Emphasizes the arts of Islam.

2730. African Creativity and Ritual. 3. [C3,G1◀CA, G] In a thematic organization, explores both North African and sub-Saharan cultures, incorporating issues pertinent to art history, African American studies, anthropology, religious studies and women's studies. Looks at music, dance, body language, festival, celebration, coming of age rituals, fertility rites, harvest and funerals. Cross listed with AAST/ANTH 2730. *Prerequisites:* none.

3005. Drawing III. 3. An advanced drawing course applying the fundamentals of drawing to creative individual problems in figure, still life, and/or landscape composition. Structured yet open assignments, lectures and critiques develop formal, conceptual, expressive, and technical understanding. Course may be repeated for a maximum of 6 credit hours. *Prerequisite:* ART 2005. (Offered spring semester).

3052. Life Drawing I. 3. An advanced drawing course working from a life model with an emphasis on composition, monochromatic media, drawing techniques and the skeletal and muscular construction as related to action and proportion in the human figure. Lectures, drawing sessions, and critiques develop formal, conceptual, and technical understanding. *Prerequisite:* ART 2005. (Normally offered fall semester)

3112 [2110]. Typography. 3. Examines the use of type, its history, structure and background in reference to the field of graphic design. Closely examines the relationship between typographical layout, concept and expression. *Prerequisites:* ART 1005, 1130, 2122 or concurrent enrollment in 2122, and 1120 or concurrent enrollment in ART 1120. (Offered spring semester)

3120. Graphic Design II. 3. Studies advanced graphic design preparation, idea generation, conceptualization, and critical thinking, from paste-up through production. All work is executed both on and off the computer. Design problems include print and packaging design. *Prerequisite:* ART 3112. (Offered fall semester)

3210. Painting II. 3 (Max. 6). Investigates various painting techniques to create individual work. Emphasizes contemporary and classical treatment of formal, aesthetic and conceptual creative expression. *Prerequisite:* ART 2210.

3250. Watercolor Painting I. 3. Investigates watercolor techniques in the development of creative work. Discussion, application and criticism of contemporary ideas about structure, form and color constitute the main activity. *Prerequisite:* ART 2210. (Offered based on sufficient demand and resources)

3310. Sculpture: Cast Form I. 3 (Max. 6). Studies of casting processes in sculpture dealing with cold-casting: paper/fabric casting, and resin; metal casting, both non-ferrous and ferrous. Covers wide variety of mold-making techniques, as well as the traditional "lost wax" process, and will focus on finished presentation. Intensive inquiries into ideas of classic and contemporary sculpture are discussed as they relate to casting,

as well as advanced research into student idea generation. *Prerequisite:* ART 1110, 1120, 1130, and 1310. (Offered fall semester)

3320. Sculpture: Mixed Media I. 3 (Max. 6). Studies use of the "found object" as a basic medium for three-dimensional expression. Includes additive processes, as well as discussing the history of the found object, and research focusing on mixed media artists. Processes include cold connection investigation, as well as hot fabrication-welding and forging. *Prerequisite:* ART 1110, 1120, 1130, and 1310. (Normally offered fall semester of every other year)

3330. Sculpture: Assembled Form I. 3 (Max. 6). Investigates constructed and assembled form as an essential means of sculptural expression. Emphasizes wood construction, assembled metals and mixed media. Utilizes general carpentry techniques, a variety of welding methods (oxyacetylene, arc, M.I.G. and T.I.G.) and other means of assembling materials. Includes investigation of concepts in assemblage and exposure to classic and contemporary forms of assembled sculpture. *Prerequisite:* ART 1110, 1120, 1130, and 1310. (Offered spring semester)

3345. Figurative Form. 3 (Max. 6). A hands-on figure modeling course, focusing on the structural design and use of the human body in art. Three-dimensional expressions will be formed with the help of a live model. Emphasis is placed on material investigation, as well as learning anatomy in skill and concept. Extensive journal/sketchbook, artist research, and presentations required. *Prerequisites:* all of foundation core, ART 1310.

3350. Metalsmithing II. 3. Introduces intermediate approaches to fabricating small scale, non-ferrous metals including etching, raised forms and silver casting. Historical and innovative contemporary applications – sculptural and body ornamentation-based – is fostered. Individual studio projects along with critical discussion and presentations address aesthetic, conceptual, and technical aspects of metalsmithing. *Prerequisite:* ART 2350.

3410. Advanced Ceramics I. 3. Studies development of ceramic form involving work in handbuilding and wheel techniques. Introduces surface treatment and glaze testing. Emphasizes design and conceptual development. Includes historical research. First semester of a one-year sequence. *Prerequisite:* completion of foundation core and consent of instructor based on portfolio review.. (Offered based on sufficient demand and resources)

3420. Advanced Ceramics II. 3. Studies development of ceramic form involving work in handbuilding and wheel techniques. Introduction to surface treatment and glaze testing. Emphasizes design and conceptual development. Includes historical research. Second semester of a one-year sequence. *Prerequisites:* completion of foundation core, ART 3410, and consent of instructor based on portfolio review. (Offered based on sufficient demand and resources)

3500. Book Arts. 3. Introduction to the history of the book as an object and the traditional crafts associated with book construction through the exploration of the book as a vehicle for artistic expression. A basic knowledge of technical processes pertaining to book construction, a general familiarity with the history of the book and a conceptual exploration of image making will be gained through demonstrations, hands-on studio work, slide lectures, visits to the museum and archives and through assigned readings. *Prerequisite:* completion of WB or junior standing

3510. Printmaking I. 3. Investigates and experiments with processes and properties of print media, including intaglio, lithography and relief. Explores ideas and works of traditional and contemporary printmaking. *Prerequisite:* ART 1005 and ART 1110 and 1130 or concurrent registration in ART 1130.

3710. Gender: Humanities Focus. 3. [C1◀CH] Explores how men and women are imaged differently, studying the influence of representation on gender (including representations in literature, film, art, popular culture, and/or performance). Sharpens students' ability to analyze texts and images and investigate those texts' messages about gender, sexuality, ethnicity and class. Cross listed with ENGL/WMST/HIST 3710. *Prerequisite:* WMST 1080 or ENGL 1010. (Offered once a year)

4005. Drawing IV. 3. An advanced drawing course exploring conceptual, expressive, personal and technical limits of process and media. Individually proposed projects lead to a coherent body of work. Open discussion and structured critiques develop personal and technical understanding. Repeatable for a maximum of 9 credit hours. *Prerequisite:* ART 3005.

4050. Advanced Drawing. 3. Advanced investigation of various drawing techniques are used to create individual work. Studies contemporary and classical treatment of line, composition and concepts using experimental and traditional treatment of drawing surface and materials. *Prerequisite:* ART 3005. (Normally offered spring semester)

4052. Life Drawing II. 3. An advanced drawing course building upon figure construction fundamentals with heavy emphasis on composition, personal expression, wet and dry media, and color with pastels. Lectures, drawing sessions and critiques develop formal, conceptual, expressive and technical understanding. May be repeated for a maximum 9 credit hours. *Prerequisite:* ART 3052 (Normally offered spring semester)

4110. Computer Graphics II. 3. Advanced work on current computer graphic design software. Presents graphic design problems to augment working knowledge of the programs. Lab/lecture. Second course in a two semester sequence. *Prerequisite:* ART 3120. (Normally offered spring semester)

4120. Senior Portfolio. 3 (Max. 6). Specialized research for the advanced graphic design student who will develop a mature style and sense of design. Problems include print, packaging, and multimedia design while also studying preparation techniques for job applications and professional skills. *Prerequisite:* ART 4110. (Normally offered fall semester)

4210. Painting III. 3 (Max. 6). Advanced investigation of various painting techniques are used to create individual works. Studies contemporary and classical treatment of form. Aesthetic and conceptual creative expression. Students work from a proposed course of study and will be self-directed. *Prerequisites:* ART 3210 and consent of instructor based on portfolio review.

4250. Watercolor Painting II. 3. Advanced investigation of watercolor techniques in the development of creative work. Discussion, application and criticism of contemporary ideas about structure, form and color constitute the main activity. *Prerequisite:* ART 3250. (Offered based on sufficient demand and resources)

4310 [5310]. Sculpture: Cast Form II. 3 (Max. 6). Advanced exploration of various problems and themes of contemporary sculpture, focusing on the experimental development of personal vision, concepts, and style. Work produced for class is examined in light of historical and recent antecedents through slide discussions, critical reviews, and research projects. Students choose from a wide variety of materials and processes, with emphasis on a cold and hot casting. For students with professional motivation and commitment. *Prerequisite:* 6 hours of 2nd-level sculpture and portfolio review by instructor. (Offered based on sufficient demand and resources)

4330. Sculpture: Assembled Form II. 3 (Max. 6). An advanced investigation in constructed and assembled forms as an essential means of sculptural expression. Focus is on the experimental development of personal vision, concepts, and style using fabrication methods in wood, metal, and found object manipulation. Work produced for class is examined in light of historical and recent antecedents through slide discussions, critical reviews and research projects. For students with professional motivation and commitment. *Prerequisites:* 6 hours of Sculpture courses, including ART 3330, and portfolio approved by instructor.

4355. Metalsmithing III. 3. Introduces advanced fabrication and surface techniques which build on skills developed in Metalsmithing I and II. Students propose a body of work for the semester based on individual aesthetic, conceptual and technical interests. Professional practices including resume writing, documenting, presenting and exhibiting artwork are addressed at this advanced level. *Prerequisite:* ART 3350.

4360. Metalsmithing: Special Topics. 3. Focus is on specific techniques in the field of Metalsmithing for the semester's duration to allow for an in-depth exploration rotating between topics such as Grandulation, Sliver Clay, Silver Casting, and Cold Connections/Mechanisms. Assigned projects complement students' proposed body of sculptural or body ornamentation-based work. *Prerequisite:* ART 3350.

4400. Internship. 1-3 (Max. 9). Allows students to bridge the gap between theoretical problems solved in the classroom and the real work world. Students are placed in a setting where they perform duties similar to a working environment. Specific arrangements are made through the major area adviser. Students are evaluated at mid-term and finals. Minimum of three contact hours of internship per week for a semester equals an hour course credit. *Prerequisite:* 12 hours in the major area. (Normally offered fall, spring and summer)

4410. Ceramics Workshop I. 3. Studies and develops traditional and experimental forms. Applies wide range of three-dimensional decorative and conceptual approaches. Studio work is independently based on an individually directed theme of exploration. Historical and technical research. First semester of a one-year sequence. *Prerequisite:* 6 hours of ART 3320, 3410. (Offered fall semester of every other year)

4420. Ceramics Workshop II. 3. Continued study and development of traditional and experimental forms. Applies wide range of three-dimensional decorative and conceptual approaches. Studio work is independently based on an individually directed theme of exploration. Historical and technical research. Second semester of a one-year sequence. *Prerequisite:* ART 4410. (Offered spring semester of every other year)

4430. Lo-Tech Ceramics. 3. [C3♦(none)] Explores elementary forming, decorating and firing processes developed by various pottery cultures. Examines basic geology, clay prospecting, kiln design and construction. Includes historical overview and contemporary work survey. Dual listed with ART 5430. *Prerequisite:* 12 hours of humanities/GED/USP. (Offered based on sufficient demand and resources)

4510. Printmaking II. 3 (Max. 6). Continues development of printmaking skills gained in introductory printmaking and focuses in particular on the relationship between process and image. Through demonstrations and studio work, slide lectures, visits to the museum and archives, and readings and discussions, technical processes will be refined, print history will be further explored and image making will continue to be developed. *Prerequisite:* completion of Foundation Core, ART 3510.

4520. Advanced Printmaking II : Exhibition and Professional Preparation. 3 (Max. 6). Preparation to continue as exhibiting artists. Students further develop their work as artist-printmakers in preparation for a solo or two-person exhibition at the completion of the semester. Presentation and execution of slides, resume, artist statement, locating opportunities and correspondence will be developed throughout the term. *Prerequisites:* ART 4510 and portfolio approval from instructor.

4610. Studies in Art. 1-3 (Max. 6). [(none)♦CH] Special topic in studio art or art history for advanced students. *Prerequisite:* 6 hours in art. (Offered based on sufficient demand and resources)

4620. Problems in Art. 1-3 (Max. 6). Special, current studio problems for advanced students. *Prerequisite:* 6 hours in art. (Offered based on sufficient demand and resources)

4635. Preparation for International Study in Art. 1. An introductory course to international study in art. Specifically focusing on various issues of culture, language, history, art and archeology the student may encounter while traveling abroad. Also provides time for the coordination of practical issues of travel, necessary documentation and insurance. Issues specific to the country of travel will also be addressed. *Prerequisites:* 6 hours in Art, WA, junior standing.

4640. Art and Ecology. 3. [C3, W3♦(none)] Focuses on the intersection of contemporary art with ecological concerns. Readings present philosophical, historical and cultural aspects of the art/ecology relationship; students reflect and question their own beliefs. Examples of art/artists are reviewed as well as how ecological artwork is developed. Students propose solutions and/or create art in, out of, or about the environment; local sites are encouraged. *Prerequisite:* 6 hours of art and/or American studies.

4650. International Study of Art. 3. Students will respond creatively to the historical, cultural and aesthetic experience in the country of travel and will use journaling, drawing, and collection of visual material to continue a more in-depth response upon return. Course sections will vary regarding structure/context. All sections will include studio and/or art historical curriculum. *Prerequisite:* ART 4635.

4660. Independent Study and Research. 1-5 (Max. 10). Research options in all creative areas. Students work independently and provide demonstrated ability and background knowledge to carry out self-directed research or creative activity in the research area. Arrangements regarding curricular obligations and meeting times are made with the instructor in advance. *Prerequisites:* 12 hours of art in research area and prior consent of instructor. (Offered fall, spring and summer)

4670. Completion International Study in Art. 1. A completion course to international study in art. Students will compile and complete their response to their experiences encountered in the culture, language, history, art and archeology while traveling abroad. Concise structured critiques will provide time for discussion and digestion of their individual and shared experiences. When possible an exhibition of creative work will be included as a culmination of the program. *Prerequisite:* ART 4650.

4710. Art of the Medieval World. 3. Studies unique qualities of art of this intriguing era of transition between classical and renaissance times. Dual listed with ART 5710. *Prerequisite:* ART 1010 or 2010. (Normally offered fall semester of every other year)

4720. 15th Century Renaissance Art. 3. [C3♦(none)] Explores artistic developments of the 15th century, primarily in Italy, in order to appreciate the relationships between artistic production and innovation and other aspects of the social and cultural environment. *Prerequisite:* ART 2010, 2020. (Normally offered spring semester)

4730. 19th Century European Art. 3. [C1♦WB] Studies 19th-century European painting, prints, and literature, covering Neoclassicism, Romanticism, Realism, Impressionism, and Post-Impressionism. Artists include Elizabeth Vigee-oLebrun, court portraitist; Mary Cassatt and Edgar Degas, famed Impressionists; Edouard Manet, controversial and troubled; Honore Daumier, jailed for incendiary political cartooning; and the eccentric Paul Gauguin and Vincent Van Gogh. *Prerequisite:* ART 2020. (Normally offered fall semester)

4740. 20th Century European Art. 3. [C1♦WB] Studies 20th-century European painting, prints, sculpture, film and literature, 1900-1945 covering German Expressionism, Cubism, de Stijl, the Bauhaus, Russian Constructivism, Dada and Surrealism. Includes artists Pablo Picasso, Henri Matisse, Kathe Kollwitz, Frida Kahlo, Marcel Duchamp, Piet Mondrain, and Salvador Dali and filmmakers Sergei Eisenstein and Robert Wiene, among others. *Prerequisite:* ART 2020. (Normally offered spring semester)

4760. American Art in the 20th Century. 3. Studies American art from 1900 to the present. *Prerequisites:* ART 2010 and 2020, or HIST 1210 and 1220. (Normally offered spring semester of every other year)

4770. Contemporary Arts Seminar. 3 (Max. 9). [C1♦(none)] Investigates typology of the programs of individual artists in terms of a close examination of their own work, writings and other direct documentation. *Prerequisite:* advanced student with background in history of the arts. (Normally offered fall semester of every other year)

4780. History of Women Artists. 3. [C3♦(none)] Studies documented influence of women as subjects, makers and receivers of art. Emphasizes careers and works of women over a wide range of times and places and under a variety of social circumstances. Greatly emphasizes developments in the 20th century. Cross listed with WMST 4780. *Prerequisite:* ART 1010, 2010, 2020. (Normally offered fall semester)

4790. Art Seminar. 1-3 (Max. 6). Special topic in art history and criticism for advanced students. *Prerequisite:* 6 hours in art history. (Offered based on sufficient demand and resources)

4830. Victorian Women's Lives: Their Art, Literature and Culture. [C1♦CA] Interdisciplinary approach to study of women's issues in art. Uses literary/cultural texts to reinforce/contradict and/or expand/enlarge the art historical basis. Topics include domestic goddess, working women, prostitution, education, marriage and divorce. Cross listed with ENGL/WMST 4830. *Prerequisite:* Either ART 2020 or WMST/ENGL 1080. (Normally offered every sixth semester)

4850. Art Institutions and Change in 19th Century Europe. 3. [C3♦WB] Explores roles of art institutions 1789 to the present in Europe and America. Uses historical examples of institutions that brought about revolutionary change to the ways the public viewed artists and, in turn, how artists' themselves have changed. Emphasis on exhibition installations of nonwestern cultures and contemporary art installations. Title: Art Institutions and Change: 1789 to the present in Europe and America; *Prerequisites:* ART 2020, or WA and consent of instructor; junior standing.

Astronomy and Astrophysics

The Bachelor of Science degree in astronomy and astrophysics is administered by the Department of Physics and Astronomy faculty. This degree is aimed primarily at those planning to pursue graduate study in astrophysics or a technical career in astronomy.

Major Program

Students in the Bachelor of Science in Astronomy major program are required to complete the following courses:

- ASTR 2310, PHYS 1310, 1320, 2310, 2320, 4210, 4310, 4410, 4420, 4510, 4840, and 3 hours of PHYS 4970
- MATH 2200, 2205, 2210, 2250, and 2310
- Either ES 2210 or PHYS 3650
- COSC 1030
- Students are also required to take ASTR 4610 plus one upper division (4000 or above) ASTR elective

Astronomy Minor Program

- A&S students seeking a minor in A&S must have 12 hours exclusive to the minor and not used in the major
- Complete one of the following: PHYS 1210, 1310
- Complete one of the following: PHYS 1220, 1320
- Complete: PHYS 2310 and 2320
- Complete: ASTR 2310 and 4610

For suggested curriculum visit the web site at physics.uwoyo.edu.

Astronomy (ASTR)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1000. Descriptive Astronomy. 3. Covers essential features of the solar system, stellar astronomy and time measurement. Students who have taken ASTR 2310 may not earn credit in ASTR 1000, and not more than 4 credit hours may be earned by taking both ASTR 1000 and 1050. (Normally offered summer only)

1050. Survey of Astronomy. 4. [S3♦SE] Consists of 3 lecture periods and a two-hour laboratory in observational and laboratory astronomy. Observing sessions are scheduled after dark and held when weather permits. Designed primarily for non-science majors. Students who have taken ASTR 2310 may not earn credit in ASTR 1050. *Prerequisite:* MATH 1000 or passing mathematics proficiency exam at Level 3. (Normally offered both semesters)

1070. The Earth: Its Physical Environment. 4. [S3♦SE] Discusses selected topics from geology, astronomy and meteorology illustrating fundamental concepts, processes, products and the interrelationships among them. Emphasizes nature of science and relationship between selected topics and society. Cross listed with GEOL 1070. *Prerequisites:* Math Level 3 or equivalent courses; consent of instructor; enrollment reserved for elementary education majors; EDCI 2000 must be selected concurrently.

2310. General Astronomy. 4. Covers the solar system (planetary interiors, atmospheres, moons, comets and meteors); physical processes in gas, black body radiation, stellar atmospheres (radiative equilibrium and types of stars); stellar evolution (Kelvin-Helmholtz contraction, nuclear burning and post main sequence evolution); galaxies (classification of interstellar matter); and cosmology (models of the universe, cosmological tests and big bang history of the universe). Laboratory includes exercises in observational astronomy. Observing sessions are scheduled after dark and held when weather permits. Not more than 4 total credit hours may be earned in ASTR 1050 and 2310. *Prerequisites:* PHYS 1220 or 1320, MATH 2210. (Normally offered spring semester)

4000. Astronomy for Teachers. 1-5 (Max. 5). Specifically designed for elementary school teachers. Presents basic concepts (time, seasons, light and its properties); planetary systems of the sun; the sun and stars; the Milky Way and galaxies; and cosmology and relativity. Emphasizes presenting these concepts to elementary school children. Half the class is devoted to laboratory and workshop activities to develop techniques for presenting these concepts through visual aides, demonstrations and films. Students may receive a maximum of 5 credits in a combination of ASTR 4000 and 4100. *Prerequisites:* 6 hours of physical or biological science, junior standing in education. (Offered summer session)

4100. Astrophysics for Secondary Teachers. 1-3 (Max. 3). Discusses modern physics, emphasizing obtaining and analyzing real data. Adaptable to junior and senior high school science classrooms. Special projects include analysis of planetary positions and images; direct observations of the sun; predictions of eclipses and tides; analyses of basic astronomical data of stars, star clusters, galaxies and clusters of galaxies; and cosmological modeling. Students may receive a maximum of 5 credits in a combination of ASTR 4000 and 4100. *Prerequisite:* junior standing in secondary science education. (Offered summer session)

4610. Introduction to Astrophysics. 3. Includes astrophysical sources of radiation, radiation transport, nonequilibrium processes, stellar atmospheres, stellar interiors and the interstellar medium. *Prerequisites:* ASTR 2310, PHYS 2310 and concurrent registration in PHYS 4210 and 4410. (Normally offered fall semester)

4620. Modern Research in Astrophysics. 3. Taught jointly by astrophysics faculty and others. Includes several topics of current research in astrophysics. *Prerequisite:* ASTR 4610.

4860. Problems in _____. 1-4 (Max. 12). Independent, in-depth study of selected problems in astronomy and astrophysics. Entirely laboratory-oriented investigations of astronomical objects. *Prerequisites:* ASTR 2310 and PHYS 2310.

4870. Special Topics in _____. 1-4 (Max. 12). Presents various subjects not normally available in regularly advertised curriculum. *Prerequisite:* ASTR 2310.

Biology

Biology Degree

The Bachelor of Science degree in Biology is designed to provide a thorough foundation in biology and other supporting areas of science and mathematics, while providing maximum flexibility and student choice. The degree program is administered jointly by the Department of Botany and the Department of Zoology and Physiology. Upon completion of the core requirements for the major (see list at www.uwyo.edu/biology), specific courses to complete the major will vary according to a student's interests and career plans and may be selected from a variety of departments on campus in consultation with a student's faculty advisor.

**Department of Botany, 3165
114 Aven Nelson Building, 766-2380**

FAX: (307) 766-2851

Web site: www.uwyo.edu/botany
and

**Department of Zoology and
Physiology, 3166
428 Biological Sciences Building,
766-4207**

FAX: (307) 766-5625

Web site: www.uwyo.edu/zoology

Freshman and Sophomore Years

Students take introductory courses in biology, chemistry, physics, and mathematics. These courses provide the foundation for more advanced work in upper division biology courses and contribute to a more comprehensive understanding of biological processes.

Junior Year

Students take courses in genetics, ecology, evolution and statistics and will select a concentration. Students should consult the biology degree web site for the list of available concentrations and requirements (www.uwyo.edu/biology) and meet with their advisor regularly to assess progress toward meeting all degree requirements.

Senior Year

In consultation with their advisors, students select advanced courses in the biological sciences that they find particularly interesting. Advisors maintain lists of suggested courses for the concentrations that include offerings from a variety of departments at UW.

Undergraduate Minor

A minor in biology is offered. For details, consult the web site www.uwyo.edu/biology.

Teacher Education

Students who plan to teach in secondary schools should consult the College of Education section.

Botany

114 Aven Nelson Building, 766-2380

FAX: (307) 766-2851

Web site: www.uwyo.edu/botany

Department Head: Steven L. Miller

Professors:

GREGORY K. BROWN, B.S. Colorado State University 1973; M.S. Arizona State University 1978; Ph.D. 1980; Professor of Botany 1997, 1985; Associate Dean of the College of Arts and Sciences 2006.

RONALD L. HARTMAN, B.S. Western Illinois University 1967; M.S. University of Wyoming 1971; Ph.D. University of Texas 1976; Professor of Botany 1988, 1977.

STEPHEN T. JACKSON, B.A. Southern Illinois University at Carbondale 1977; M.S. 1978; Ph.D. Indiana University 1983; Professor of Botany 2001, 1995.

STEVEN L. MILLER, B.S. University of Wyoming 1979; M.S. Virginia Polytechnic Institute and State University 1982; Ph.D. 1985; Professor of Botany 2002, 1990.

WILLIAM A. REINERS, B.A. Knox College 1959; M.S. Rutgers 1962; Ph.D. 1964; Professor of Botany 1983.

Associate Professors:

STEPHEN K. HERBERT, B.S. Seattle Pacific University 1980; M.S. University of Washington 1984; Ph.D. 1988; Associate Professor of Botany 1999.

DAVID WILLIAMS, B.A. The University of Texas, Austin 1985; M.S. Texas A&M University 1988; Ph.D. Washington State University 1992; Associate Professor of Botany 2003.

CYNTHIA WEINIG, B.A. (Hons.) Brown University 1991; Ph.D. Indiana University; Associate Professor of Botany and Molecular Biology 2007.

Assistant Professors:

ALEX BUERKLE, B.A. University of Missouri 1990; Ph.D. Indiana University 1997; Assistant Professor of Botany 2004.

BRENTE EWERS, B.S. Colorado State University 1995; M.S. Duke University 1997; Ph.D. 1999; Assistant Professor of Botany 2002.

KIONA OGLE, B.S. Northern Arizona State University 1997; M.S. Duke University 2003; Ph.D. 2003; Assistant Professor of Botany 2006.

ELISE PENDALL, B.S. Cornell University 1983; M.S. University of California, Berkeley 1989; Ph.D. University of Arizona 1997; Assistant Professor of Botany 2002.

DANIEL B. TINKER, B.S. Ft. Lewis College 1993; M.S. University of Wyoming 1996; Ph.D. 1999; Assistant Professor of Botany 2005.

NAOMI WARD, B.Sc. (Hons.) University of Queensland 1993; Ph.D. University of Warwick 1997; Assistant Professor of Molecular Biology and Botany 2007.

Assistant Lecturers:

KENNETH L. DRIESE, B.S. University of Virginia 1981; M.S. University of Wyoming 1992; Ph.D. 2004; Research Scientist/Assistant Lecturer in Botany 2002.

MARK E. LYFORD, B.A. St. Olaf College 1993; M.S. University of Wyoming 1995; Ph.D. 2001; Assistant Lecturer of Botany 2005; Director of Biology Program.

Professors Emeriti:

Martha Christensen, Dennis H. Knight

Botany is the study of plants and their relationship to human affairs. The science is fundamental to food, fiber and antibiotic production; to the management of landscapes for beauty, recreation, forest products and forage; and to the protection of landscapes against pollution and other abuses. The botanist is concerned with the diversity and classification of plants and fungi, their structure at both the macroscopic and microscopic levels, and their physiology, ecology and genetics and evolutionary relationships.

Courses in botany have been developed to meet the needs of the following groups of students: those who desire a general knowledge of the subject for its cultural value; those specializing in areas which require a background in plant biology; and those selecting botany or biology as a major.

Undergraduate Degrees**Biology**

The Biology major is an interdepartmental program designed for students interested in obtaining a broad education in biological sciences. It enables students to combine courses in biology, botany, zoology, physiology, and other biological sciences to meet the requirements of the major. On completion of the core requirements for the major, specific courses selected to complete the major may vary according to students' interests and are worked out by consultations between student and adviser. The requirements for a bachelor's degree are outlined in the Biology section of this *Bulletin* or see the web site at www.uwyo.edu/biology.

Botany

Students majoring in botany may pursue a B.S. degree by earning at least 33 credit hours in botany and biology courses, and are required to take the following: BOT 3200, 4300, 4400, 4640, or 4680; LIFE 2022, 2023, 3400, 3410, 3050, 3600; MICR/MOLB 2021; or the equivalents of these courses. In addition, majors must take CHEM 1020, 1030, and 2300 or 2320; MATH 2200; PHYS 1110 or 1310, and 1120 or 1320; and one course in computer science, statistics, or mathematics (beyond MATH 2200); one additional 3 hour laboratory course (or courses totaling 3 hours) in chemistry, physics, or molecular

biology; or the equivalent of these courses. The B.A. in Botany has been phased out pending approval by the Trustees.

The department offers an undergraduate environment and natural resources (ENR) concentration which provides botany students both academic and practical experience interacting with students from other ENR-related disciplines. See the School of Environment and Natural Resources section in this bulletin for more information.

Suggested B.S. Program in Botany

The following curriculum should be considered only as a guide for freshmen and sophomores. Student schedules are arranged in consultation with their adviser. Majors are encouraged, but not required, to enroll for summer courses once during the four-year period, either on campus or at a biological field station.

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
LIFE	1001	2
LIFE	1010	4
CHEM	1020	4
ENGL	1010	3
MATH	1400 or 1450	3-5
Total Hrs.		16-18

FRESHMAN YEAR: Spring		Hrs.
LIFE	2021	4
CHEM	1030	4
University Studies elective	.....	3-6
MATH	1405	3
Physical Activity and Health	.....	1
Total Hrs.		15-18

SOPHOMORE YEAR: Fall		Hrs.
LIFE	3400	3
LIFE	2023 or elective	3
MATH	2200	4
Foreign language	.....	4
Electives	.....	3-4
Total Hrs.		17-18

SOPHOMORE YEAR: Spring		Hrs.
BOT/LIFE elective	.....	4
STAT/MATH/COSC	.....	3-4
Foreign language	.....	4
Electives	.....	3-6
Total Hrs.		14-18

Undergraduate Minor

A minor is offered by the Department of Botany. Further information may be obtained by contacting the department, or at www.uwyo.edu/botany/.

Teacher Education

Botany collaborates with the College of Education in offering the Natural Sciences Program, which provides training in science and mathematics for prospective K-12 teachers.

Graduate Program

The Department of Botany offers programs leading to both the M.S. and Ph.D. degrees. Consult the *Graduate Bulletin* for information concerning graduate courses and advanced degrees.

Botany (BOT)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↯QB]).

3100. Plants and Civilization. 3. [C2, G1↯L] An overview of ways plants have and will continue to influence human civilizations. Botanical origins and socio-economic impacts of deforestation, plant fibers, stimulants, drugs and medicinals, wood products, foods and other plant-derived resources is discussed. Students write short papers building skills in research, critical thinking, argumentation, and citation strength. *Prerequisite:* LIFE 1000 or 1010. (Normally offered spring semester)

3150. Survey of Remote Sensing Applications. 3. Provides an introduction to remote sensing with a survey of applications in different fields. It includes a brief introduction to fundamental of remote sensing and surveys applications of aerial photography, multi- and hyperspectral, active and thermal remote sensing, and global change remote sensing. Cross listed with GEOG 3150. *Prerequisites:* completion of a USP QA course and one science course with laboratory.

3200. Plant Anatomy. 3. Acquaints students with the origin, structure, development and functions of plant cells, tissues and organs. *Prerequisite:* LIFE 2023. (Normally offered spring semester)

4001. Modeling the Earth System. 4. Takes a modeling approach to demonstrate how the Earth is integrated into an interconnected system through exchanges of energy and matter, and how Earth system functioning is susceptible to human alteration. Unifying concepts focus on quantitative interactions between the Earth and the Sun, and between the Earth's lithosphere, hydrosphere, biosphere and atmosphere. Cross listed with ATSC/ESS/GEOL. *Prerequisites:* MATH 2205 or equivalent and [ESS 2000 or GEOL 2000].

4040. Conservation of Natural Resources. 3. Geographically analyzes conservation of natural and human resources, as well as political, social and ethical ramifications of our environmental policy. Cross listed with GEOG 4040. *Prerequisite:* 6 hours of GEOG or ENR.

4100. Writing in Biological Sciences. 3. [W3◀WC, L] Writing intensive course, for zoology and physiology, biology and botany majors. Teaches students to write in the format of biological disciplines. Students must be concurrently enrolled in an upper-division 3-4 hours ZOO, BOT or BIOL course or have successfully completed such a class. Cross listed with ZOO 4100. *Prerequisites:* WA, WB and prior or concurrent registration for an upper division ZOO, BOT, LIFE course.

4111. Remote Sensing of the Environment. 4. Combined lecture and laboratory course introduces students to the fundamentals of remote sensing with a strong emphasis on vegetation, land cover and environmental applications. Students learn to use digital spectral data to distinguish characteristics of the terrestrial biosphere important for ecological and land management applications. Dual listed with BOT 5111; cross listed with GEOG 4111. *Prerequisites:* QA and one science course with lab.

4130. Applied Remote Sensing for Agricultural Management. 3. Addresses specific applications of remote sensing to cropland and rangeland management. Provides an overview of remote sensing, specific applications for crops, shrubs and range vegetation. The course foundation will be agriculture-specific remote sensing of green plants. Cross listed with RNEW/AECL 4130; dual listed with BOT 5130. *Prerequisites:* QA course and 9 credit hours in student's major field and junior/senior standing.

4211. Advanced Remote Sensing of the Environment. 4. Includes lecture and laboratory. Specific topics include a review of remote sensing fundamentals and methods for using high spatial resolution data, hyperspectral data, active remote sensing, advanced image processing, advanced classification techniques and statistical techniques specific to exploring remotely sensed data. Cross listed with GEOG 4211; dual listed with BOT 5211. *Prerequisite:* BOT/GEOG/GEOL 4111.

4300. Mycology. 4. Provides an understanding of fungi from mushrooms to molds and how they affect our daily lives. Lecture and lab topics include mushroom identification; fungi symbiotic with plants, animals and insects; and fungi that are important in medicine, industry and agriculture. *Prerequisite:* LIFE 2023. (Normally offered fall semester)

4330. Cultivation of Edible Mushrooms. 3. An in-depth study of mushroom cultivation emphasizing a hands-on approach. Students learn about the history and biology of edible and medicinal mushrooms as well as about tissue culture, spawn generation techniques, substrate preparation, inoculation techniques, and strategies for maximizing yield. *Prerequisite:* BOT 4300.

4350. Medical Mycology. 3. A course on human pathogenic fungi and actinomycetes, covering the essential features, clinical manifestation, epidemiology and pathology of fungal infections. Familiarizes students with the ability of fungi

to invade hosts, immunological and serological changes evoked by fungi, and drugs and therapies currently available. *Prerequisite:* general microbiology or mycology. (Normally offered spring semester)

4390. Fungal Physiology and Ecology. 3. A comprehensive lecture-seminar-discussion course designed to familiarize advanced students with physiological processes underlying fungal ecology, and modern methods used to study those processes. A comparative organismal approach is taken, involving both symbiotic fungi and saprophytic fungi, with emphasis on ectomycorrhizal and decomposer modes of nutrition in forest ecosystems. Dual listed with BOT 5390. *Prerequisites:* BOT 4300 and one course in plant physiology or ecology.

4400. Plant Physiology. 4. Provides a basic understanding of plant growth and development. Covers water relations, general metabolism, nutrition, and hormonal and environmental controls. Dual listed with BOT 5400. *Prerequisite:* LIFE 2023, CHEM 1030, 2300 or equivalents. (Normally offered spring semester)

4550. Computational Biology. 4. Introduces concepts and skills that are generally applicable to computational analysis of biological questions. Content is motivated by applied projects that require basic computer programming for analysis. Two computer languages are introduced and utilized. *Prerequisite:* MATH 2200 or STAT 2050 or equivalent; LIFE 1010 or equivalent.

4640. Flora of the Rocky Mountains. 3. Field course. Acquaints students with the flora of the surrounding region. Emphasizes field identification and collection from plant communities encompassing a wide range of environments, such as grasslands, forests and alpine tundra. *Prerequisite:* LIFE 2023. (Normally offered summer session)

4664. Special Topics in Evolution. 1-4 (Max. 6). Advanced topics in evolutionary biology are engaged by studying primary research and topical synthesis in the current literature. Dual listed with BOT 5664. *Prerequisite:* LIFE 3500 or equivalent.

4680. Taxonomy of Vascular Plants. 4. A study of classification principles, nomenclature rules and systematic botany literature. Plants of the Rocky Mountain region are used primarily as examples, but the course gives a comprehensive view of the characteristics and relationships of the principal plants families. Dual listed with BOT 5680. *Prerequisite:* LIFE 2023. (Normally offered spring semester)

4700. Vegetation Ecology. 4. Reviews the ecology of major vegetation types, emphasizing patterns of vegetation distribution, vegetation-environment relationships, succession, the effect of fire and management decisions, and methods of vegetation analysis. Dual listed with BOT 5700. *Prerequisite:* LIFE 3400. (Normally offered fall semester)

4730. Plant Physiological Ecology. 4. Acquaints advanced students with environmental factors which affect the establishment and growth of plants. Emphasizes adaptive mechanisms. Cross listed with RNEW 4730. Dual listed with BOT 5730. *Prerequisites:* one course in physiology and one course in ecology. (Normally offered spring semester)

4745. Terrestrial Ecosystem Ecology. 3. Advanced course examines fundamental ecosystem functions and their relationship to ecosystem structure using a systems approach. We study cycles of carbon, water and nutrients through ecosystem components with an emphasis on interactions among plants, soil, and the atmosphere. Current readings focus on responses of terrestrial ecosystems to global climate change and human disturbance. Dual listed with BOT 5745; cross listed with ECOL 5745. *Prerequisite:* 1 course in ecology.

4775. Forest Ecology. 4. Integrative study of the structure, function, and ecological diversity of forested ecosystems, and the physical factors that influence this diversity, including emergent properties of energy flow and nutrient cycling. Special emphasis is given to understanding forest disturbances and succession, and implications for impacts of management and sustainability are discussed throughout. Cross listed with RNEW 4775. *Prerequisite:* LIFE 3400.

4780. Biogeochemistry. 4. A comprehensive treatment of biogeochemistry with emphasis on biogenic elements and biological processes. Reviews occurrence of elements, their behavior in the biosphere, and how their cycles are affected by humans. Dual listed with BOT 5780. *Prerequisite:* a course in organic chemistry.

4790 [4710]. Special Topics in Ecology. 1-3 (Max. 6). Acquaints students with various topics not covered in regular courses. Emphasizes recent developments appearing in journal literature. Dual listed with BOT 5790. *Prerequisite:* two courses in ecology. (Normally offered both semesters)

4900. Problems. 1-10 (Max. 10). Independent study of a particular problem or phase of botany, or presentation of reviews and discussion of current advances in botanical investigations. *Prerequisite:* LIFE 2023. (Offered fall, spring and summer)

4970. Internship. 1-12 (Max. 12). Provides undergraduate students with academic credit for approved work experiences in the fields of botany and biology. Must be arranged in consultation with a botany faculty member and the work supervisor. Offered S/U only. *Prerequisites:* junior or senior standing, 3.0 GPA, declared major in botany or biology, and approval by a botany faculty member and work supervisor.

Chemistry

403 Physical Sciences Building,

766-4363

FAX: (307) 766-2807

Web site: www.uwyo.edu/chemistry

Department Head: Edward Clennan

Professors:

EDWARD L. CLENNAN, B.S. University of Wisconsin-River Falls 1973; Ph.D. University of Wisconsin-Madison 1977; Professor of Chemistry 1989, 1979.

BRUCE A. PARKINSON, B.S. Iowa State University 1972; Ph.D. California Institute of Technology 1977; Professor of Chemistry 2008.

DEAN M. RODDICK, B.S. University of California-Berkeley 1979; Ph.D. California Institute of Technology 1984; Professor of Chemistry 1997, 1986.

Associate Professors:

DAVID T. ANDERSON, B.S. George Washington University 1987; Ph.D. Dartmouth College 1993; Associate Professor of Chemistry 2006, 2000.

ROBERT C. CORCORAN, B.S. University of Chicago 1978; Ph.D. Columbia University 1983; Associate Professor of Chemistry 1992.

JOHN O. HOBERG, B.A. Jamestown College 1984; Ph.D. Montana State University 1990; Associate Professor of Chemistry 2004.

Assistant Professors:

MILAN BALAZ, M.S. Comenius University 1999; Ph.D. Université Louis Pasteur 2003; Assistant Professor of Chemistry 2008.

FRANCO BASILE, B.S. University of Wisconsin-Eau Claire 1986; Ph.D. Purdue University 1992; Assistant Professor of Chemistry 2003.

DEBASHIS DUTTA, B. Tech Indian Institute of Technology 1998; Ph.D. University of Notre Dame 2003; Assistant Professor of Chemistry 2006.

JAN KUBELKA, M.S. Charles University of Prague 1996; Ph.D. University of Illinois at Chicago 2002; Assistant Professor of Chemistry 2005.

TERESA LEHMANN DELLA VOLPE, B.S. Universidad Central de Venezuela 1987; Ph.D. University of Minnesota 1997; Assistant Professor of Chemistry 2008.

MARK P. MEHN, B.S. University of Wisconsin-Stevens Point 1997; Ph.D. University of Minnesota 2003; Assistant Professor of Chemistry 2006.

JING ZHOU, B.S. Xiamen University 1997; Ph.D. University of South Carolina 2004; Assistant Professor of Chemistry 2007.

Research Faculty:

NAVAMONEY ARULSAM, B.Sc. Madurai-Kamaraj University, India 1982; M.Sc. 1986; Ph.D. University of Hyderabad, India 1991; Associate Research Scientist 2008, 2005.

KEITH T. CARRON, B.A. Washington University 1980; M.S. Northwestern University 1981; Ph.D. 1983; Professor of Chemistry 1998, 1988.

Adjunct Professors:

JOHN F. ACKERMAN, B.S. University of Wyoming 1974; Ph.D. Brown University 1976; Adjunct Professor of Chemistry 1996.

YURI DAHNOVSKI, Ph.D. Institute of Chemical Physics, Moscow 1983; Adjunct Professor of Chemistry 2001.

ERIC KURT DOLENCE, B.S. University of Wyoming 1983; Ph.D. University of Kentucky 1987; Adjunct Assistant Professor of Chemistry 2004.

Assistant Lecturer:

CARLA DEE BECKETT, B.S. University of Wyoming 1991; M.S. 2007; Assistant Lecturer of Chemistry 2008.

Senior Lecturer:

PATRICIA A. GOODSON, B.S. University of Alabama 1983; M.S. University of Wisconsin-Madison 1986; Ph.D. University of Wyoming 1990; Senior Lecturer of Chemistry 2008, 1999.

Associate Lecturer:

MICHAEL S. SOMMER, B.A. Queens College, CUNY 1984; M.A. 1985; A.M. Harvard University 1987; Ph.D. 1996; Associate Lecturer of Chemistry 2006, 2001.

Professors Emeritus:

Vernon Archer, R. Owen Asplund, Daniel A. Buttry, Geoffrey Coates, Clyde Edmiston, Anthony Guzzo, Suzanne Harris, Robert Hurtubise, John Maurer, E.G. Meyer, David A. Nelson, Lewis Noe, David Jaeger

Chemistry is one of the fundamental physical sciences dealing with the structure and properties of matter, along with changes that matter undergoes. Chemistry's scope encompasses all substances, living and non-living. Its study and practice include (1) the theoretical and experimental aspects of chemical bonding and structure using computational, spectroscopic, and diffraction techniques; (2) the laboratory synthesis from simple starting materials of desirable compounds in the inorganic, organic and biological classes; and (3) the total analysis of complex mixtures using modern spectroscopic and electrochemical methods. Since we live in a material world, applications of chemical knowledge influence most areas of human endeavor: scientific, economic, political and social. Many of the advances in the areas of new materials, medicines, biotechnology, food production, new energy sources and semiconductor technology associated with the "computer revolution" are based on chemistry and chemical principles. Some understanding of these chemical principles should be part of every educated person's knowledge.

Because of the broad scope of this discipline, the Department of Chemistry offers a variety of courses and programs. These programs meet the needs of students planning professional careers in chemistry and those wishing to major in chemistry for other objectives. In particular, chemistry is a traditional preprofessional major

for students interested in medicine and dentistry. Specific courses are offered to serve other major areas and as part of University Studies and A&S core requirements.

Students who have taken an AP examination and have received a score of 4 or 5 may receive credit for CHEM 1020 and 1030.

The department offers programs leading to an M.S. or a Ph.D. For further information please consult the *Graduate Bulletin*.

Undergraduate Major

The department offers **Plan 1**, B.A. and B.S. degree programs, and **Plan 2**, professional B.S. degree program. The Plan 1 B.A. degree includes a minimum of 32 hours of chemistry. The Plan 1 B.S. degree requires at least 38 hours. The Plan 2 B.S. requires 46 hours of chemistry courses. Since the chemistry required in the first two years of all programs is the same, students interested in pursuing a chemistry major can elect any program initially. Discussions with a departmental adviser will allow students to choose the most appropriate major for their career objectives. In general, students planning graduate work in chemistry should elect one of the B.S. programs. The B.A. program has a more liberal content with additional electives. It would support careers in business, law and advanced study in areas needing a strong chemistry background such as toxicology or forensic science.

A B.A. is suitable for students in the College of Education who wish to obtain an A&S degree, and may also be appropriate for some premedical tracks. The Plan 2 professional program is designed to meet standards set by the American Chemical Society (ACS). A student who completes the Plan 2 B.S. program will be certified by the Department of Chemistry to the ACS as having met the specific ACS requirements for undergraduate professional training in chemistry.

Plan 1 B.A. in Chemistry

(32 hours of chemistry)

Course Requirements	Hrs.
Basic chemistry	26
1050 and 1060 (or 1020 and 1030), 2230, 2420 and 2440, 3550 or 4507, and 4110	
Additional upper-level chemistry	6
(including one of the following: 4100, 4230, or 4530)	
MATH 2200 and 2205	8
PHYS	8
1310 and 1320 (or 1110 and 1120 or 1210 and 1220)	
Additional University Studies requirements	28
(assumes double count on Global Awareness course and CHEM 1001)	
Additional A&S core requirements	17
(assumes double count on non-western course)	
Electives	27
Physical education	1
Total Hrs.	121

Plan 1 B.S. in Chemistry

(38 hours of chemistry)

Course Requirements	Hrs.
Basic chemistry	33
1050 and 1060 (or 1020 and 1030), 2230, 2420 and 2440, 4000 (1 hour), 4100, 4110, 4507, 4508 and 4530	
CHEM 4930	2
Additional upper-level chemistry	3
MATH 2200, 2205 and 2210	12
PHYS	8
1310 and 1320 (or 1210 and 1220)	
Additional University Studies	
requirements	28
(assumes double count on Global Awareness course and CHEM 1001)	
Additional A&S core requirements	17
(assumes double count on non-western course)	
Electives	17
Physical education	1
Total Hrs.	121

Plan 2 Professional B.S. in Chemistry

(46 hours of chemistry)

Course Requirements	Hrs.
Basic chemistry	40-41
1050 and 1060 (or 1020 and 1030), 2230, 2420 and 2440, 3610 (or MOLB 4600), 4000 (1 hour), 4100, 4110, 4230, 4507, 4508 and 4530	
CHEM 4930	3
Additional upper-division chemistry.....	2-3
MATH 2200, 2205 and 2210	12
PHYS 1310 and 1320	8
(or 1210 and 1220)	
Computer science	3
Additional University Studies	
requirements	28
(assumes double count on Global Awareness course and CHEM 1001)	
Additional A & S core	
requirements	10-12
Two upper-division courses outside chemistry or two semesters of a single foreign language. (assumes double count on non-western course)	
Program supporting courses	18
A group of courses selected to further the career objectives of the individual student. These are chosen after consultation with the departmental adviser and must subsequently be approved by the departmental Undergraduate Studies Committee	
Electives	4-7
Physical education	1
Total Hrs.	129

Suggested Program for a Bachelor's Degree in Chemistry

(Freshman and Sophomore Years)

Suggested Course Sequence

FRESHMAN YEAR: Fall	Hrs.
CHEM 1050 or 1020	4
ENGL 1010	3
MATH 2200	4
A&S Core or University Studies	
Requirements	3-4
CHEM 1001	1
Total Hrs.	15-16

FRESHMAN YEAR: Spring	Hrs.
CHEM 1060 or 1030	4
MATH 2205	4
A&S core or University Studies	
requirements	6-8
Total Hrs.	14-16

SOPHOMORE YEAR: Fall	Hrs.
CHEM 2420	4
MATH 2210 (B.S. requirement).....	4
PHYS 1310 or 1210 or 1110	4
A&S core or University Studies	
requirements	3-4
Total Hrs.	15-16

SOPHOMORE YEAR: Spring	Hrs.
CHEM 2440	4
CHEM 2230	4
PHYS 1320 or 1220 or 1120	4
A&S core or University Studies	
requirements	3-4
Total Hrs.	15-16

Undergraduate Minor

A minor is offered in the Department of Chemistry. Further information may be found at the web site www.uwyo.edu/chemistry/undergraduate.

Teacher Education

Teacher certification requirements are available through the College of Education. Students preparing to teach chemistry in the secondary schools are advised to take a major in chemistry or a major composed of carefully selected courses in chemistry and related sciences.

A special interdisciplinary curriculum in chemistry and a related area may be arranged. (See department head for information.)

Chemistry (CHEM)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

1000. Introductory Chemistry. 4. [S2◀SP] Deals with principles of chemistry and some applications to inorganic chemistry. For students in family and consumer sciences, nursing, education, general arts and sciences and most agriculture curricula. Students who have credit in CHEM 1020 or 1050 may not receive duplicate credit for this course. Laboratory and discussion: 3 hours per week. *Prerequisite:* ACT math score of 23 or above. (Normally offered fall semester)

1001. The Chemical Community. 1. [(none)◀I, L]A survey of chemistry both as a major and a discipline. Chemistry's historical role, the scientific method, scientific ethics, as well as current challenges in the major fields of chemistry are discussed. Information literacy is strongly emphasized, both by familiarization with university resources as well as specialized chemical databases. (Normally offered fall semester)

1020. General Chemistry I. 4. [S2◀SP] First semester of a one-year introductory series. Provides broad coverage of chemistry principles with inorganic and organic systems applications. Credit will not be allowed for more than one of CHEM 1020, 1050 and 1000. Laboratory and discussion: 3 hours per week. *Prerequisite:* ACT Math score of 23 or above, or concurrent enrollment in Math 1400, or 1405 or 1450. (Normally offered fall, spring and summer)

1030. General Chemistry II. 4. [S2◀SP] Second semester of a one-year introductory series. Provides broad coverage of chemistry principles with inorganic and organic systems applications. Credit will not be allowed for more than one of CHEM 1030 and 1060. Laboratory and discussion: 3 hours per week. *Prerequisite:* CHEM 1020. (Normally offered fall, spring and summer)

1050. Advanced General Chemistry I. 4. [S2◀SP] First semester of a one-year series covering chemical principles. Emphasizes inorganic chemistry and briefly discusses qualitative analysis. Credit not given for more than one of CHEM 1020, 1050 and 1000. Laboratory: 3 hours per week. *Prerequisites:* one year high school chemistry, and an ACT Math score of 27 or higher or concurrent enrollment in Math 2200. (Normally offered fall semester)

1060. Advanced General Chemistry II. 4. [S2◀SP] Second semester of a one-year series covering chemical principles. Emphasizes inorganic chemistry and briefly discusses qualitative analysis. Credit not given for more than one of CHEM 1030 and 1060. Laboratory: 3 hours per week. *Prerequisite:* CHEM 1050 or CHEM 1020, with permission of the instructor. (Normally offered spring semester)

2000. Special Topics in the Laboratory.

1. (Max. 4) Introduces students to laboratory experience in chemistry. *Prerequisite:* special permission from the chemistry department.

2230. Quantitative Analysis. 4. Broad, general coverage of analytical techniques, principles and calculations. Laboratory: 6 hours per week.

Prerequisite: CHEM 1030, 1060 or equivalent. (Normally offered spring semester)

2300. Introductory Organic Chemistry.

4. Terminal course in organic and beginning biological chemistry. No credit will be allowed in CHEM 2300 if credit earned in CHEM 2420.

Prerequisite: CHEM 1020, 1050, 1000 or equivalent. Note: This course is **not** an acceptable prerequisite for CHEM 2440. (Normally offered spring semester)

2420. Organic Chemistry I. 4.

First semester of a one-year sequence in organic chemistry. Approached from the viewpoint of modern chemical theory, emphasizing structural and mechanistic concepts. The course incorporates a laboratory integrated with the lecture. Students desiring a one-semester terminal course should take CHEM 2300. Laboratory: 3 hours per week. No credit allowed in CHEM 2420 if credit earned in 2300. *Prerequisite:* CHEM 1030 or 1060. (Normally offered fall and summer)

2440. Organic Chemistry II. 4.

Second semester of a one-year sequence in organic chemistry. Approached from viewpoint of modern chemical theory, emphasizing structural and mechanistic concepts. The course incorporates a laboratory integrated with the lecture. Students desiring a one-semester terminal course should take CHEM 2300. Laboratory: 3 hours per week. *Prerequisites:* CHEM 1030 or 1060 and 2420. Note: CHEM 2300 is not an acceptable prerequisite for CHEM 2440. (Normally offered spring semester)

3020. Environmental Chemistry. 3.

[M3♦(none)] Environment and modern environmental problems in terms of chemical structures and reactions. Chemical principles of equilibrium, kinetics, and thermodynamics are used to help understand our changing environment. Topics include toxicological chemistry, aquatic chemistry, atmospheric chemistry, and green chemistry. *Prerequisites:* CHEM 2300 or 2420; 2230; and QA course.

3550. Physical Chemistry for the Life Sciences. 3. [M3♦(none)]

Deals with areas of physical chemistry of interest to students majoring in the life sciences. Covers thermodynamics, kinetics, equilibrium and spectroscopy, using biological systems for development and illustration. Credit is allowed for only one of the courses: CHEM 3550 or 4507. *Prerequisites:* CHEM 1030, MATH 2200. (Normally offered every other year)

3610 [3750]. Principles of Biochemistry.

4. For students who desire a thorough study of biological systems chemistry from a physical and physical organic approach, but who do not have a background in physical chemistry. Biochemical systems of living organisms are examined in terms of basic chemical concepts. No credit if credit earned in MOLB 4600. Cross listed with MOLB 3610. *Prerequisite:* LIFE 1000 or 1010, and CHEM 2300 or 2440. (Normally offered fall semester)

4000. Career Skills. 1. Designed to develop skills needed for success in the chemical profession or in graduate school. Topics include information on graduate programs, resume preparation, scientific writing, oral presentation, technical seminars, and laboratory note keeping. Available S/U only. *Prerequisites:* chemistry major, CHEM 4110 or concurrent enrollment. (Normally offered fall semester)

4040. Chemical Literature. 1-2 (Max. 2).

Introduces literature of chemistry and methods employed in searching the literature. *Prerequisites:* CHEM 2300 or 2420; CHEM 4507 or 3550 or concurrent enrollment; scientific German recommended. (Normally offered alternating spring semesters)

4100. Inorganic Chemistry Laboratory. 2.

Introduces basic inorganic laboratory synthetic techniques and methods of analysis. *Prerequisite:* CHEM 2440 and 4110 or concurrent enrollment. (Offered fall semester)

4110. Introductory Inorganic Chemistry.

3. A basic course on theoretical and descriptive inorganic chemistry. Dual listed with CHEM 5110. *Prerequisite:* CHEM 2420. (Normally offered fall semester)

4230. Instrumental Methods of Chemical Analysis. 4.

Introduces optical, electro-analytical and separation methods of analysis, emphasizing practical industrial applications. *Prerequisite:* CHEM 2230. (Normally offered fall semester)

4507. Physical Chemistry I. 3. [M3♦(none)]

First semester of a one-year sequence. Emphasis on introductory quantum mechanics, atomic structure, molecular bonding and structure and spectroscopy. Kinetic molecular theory of gasses may be introduced. Uses multivariable calculus, differential equations and some linear algebra. *Prerequisites:* one year of general chemistry, multivariable calculus, one year of general college physics. (Normally offered fall semester)

4508. Physical Chemistry II. 3. [M3♦(none)]

Second semester of a one year sequence, emphasizes kinetic theory of gasses and non-ideal solutions, chemical equilibrium, electrochemistry, statistical thermodynamics, and reaction kinetics. Uses multivariable calculus and differential equations. *Prerequisite:* CHEM 4507. (Normally offered spring semester)

4515. Applied Mathematics in Physical Chemistry I. 3.

Designed to introduce the necessary mathematical background and essential computer programming tools for students of physical and theoretical chemistry. This includes an introduction into linear algebra, multivariate calculus, differential equations, analysis and modeling of experimental data, use of Matlab software and mathematical analysis of physical chemistry problems. Dual listed with CHEM 5515. *Prerequisites:* MATH 2200 and 2205, CHEM 1020/1030 or 1050/1060.

4516. Applied Mathematics in Physical Chemistry II. 3.

Covers the advanced mathematical techniques in physical and theoretical chemistry. This includes introduction into probability and stochastic processes, infinite series, vector and tensor calculus, Fourier transforms and partial differential equations. Includes practical numerical problem solutions using MatLab software and applications of the mathematical analysis to specific physical chemistry problems. Dual listed with CHEM 5516. *Prerequisite:* CHEM 4515.

4530. Physical Chemistry Laboratory.

1. Illustrates principles of physical chemistry, techniques of measurement, and analysis and interpretation of data. Laboratory: 3 hours per week. *Prerequisite:* CHEM 2230, 4506 or concurrent enrollment. (Normally offered spring semester)

4560. Molecular Modeling - Computational Chemistry. 3.

Emphasizes training in computational, electronic and vibrational structure, calculations ranging from molecular mechanics to semi-empirical to ab-initio methods. Dual listed with CHEM 5560. *Prerequisite:* CHEM 4507. (Normally offered alternating spring semesters)

4920. Special Problems in Chemistry. 1-3 (Max. 6).

Probes deeply into special areas of chemistry through library or laboratory work. Taken under supervision of faculty in the area of the investigation. Laboratory: 3-9 hours per week. *Prerequisite:* consent of instructor. (Offered every semester)

4930. Undergraduate Research. 1-3 (Max. 9).

Research activities on a chemical project of limited scope or as part of a laboratory project of great scope. A written report is submitted to the department each semester of enrollment. Laboratory: 4-12 hours per week. *Prerequisites:* chemistry major and consent of instructor. (Offered every semester)

Chicano Studies

106 Ross Hall, 766-4127

Web site: uwyo.edu/ChicanoStudies

Director: Ed A. Muñoz

Professor:

FRANCISCO RIOS, B.A. Carroll College 1978; M.A. University of Wisconsin 1981; Ph.D. 1991; Professor of Educational Studies.

Associate Professors:

ADRIAN BANTJES, B.A. University Leiden, The Netherlands 1980; M.A. University of Texas at Austin 1991; Associate Professor of History 1997.

PATRICIA HAMEL, B.A. Pennsylvania State University 1964; M.A. 1968; Ph.D. University of Kansas 1985; Associate Professor of Spanish 1995, 1989.

ED A. MUÑOZ, B.A. University of Nebraska-Lincoln 1990; M.A. 1992; Ph.D. 1996; Associate Professor of Criminal Justice 2008, 2003; Director of Chicano Studies Program 2003.

MARGARET M. ZAMUDIO, B.A. University of California, Los Angeles 1989; M.A. 1991; Ph.D. 1996; Associate Professor of Sociology 2008, 2003.

Assistant Professors:

CECILIA J. ARAGON, B.S. McMurry University Texas; M.A. University of New Mexico; Ph.D. Arizona State University; Assistant Professor of Theatre and Dance 2005.

CARMELITA CASTANEDA, B.A. California State University Sacramento; M.A. Virginia Polytechnic and State University 1992; Ed.D. University of Massachusetts Amherst 2002; Assistant Professor of Educational Studies.

The Chicano Studies program, through an interdisciplinary and comparative approach examines the history, cultures, language and contemporary experiences of Mexicans, Mexican Americans and other Latinos/as in Wyoming, the United States and the world.

The Chicano Studies Program offers an academic minor. Information about the Chicano Studies Program and minor can be obtained from the Chicano Studies Program office located in the Arts and Sciences Building, room 326, (307) 766-4127.

Chicano Studies (CHST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1030. Social Justice in the 21st Century. 3. [(none)↔I, D] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with WMST/AIST/AAST/AMST 1030. Enrollment preference will be given to We The People FIG students.

1100. Introduction to Chicano Studies. 3. [C2, G1↔CS, D] Provides a basic understanding of the historical, social, and cultural context of the Mexican American Chicano people. Examines the major theoretical and conceptual frameworks which explain the Mexican American Chicano experience. Examines the comparative relations with other groups and major social and policy issues. Provides an introduction to the conduct of research in field.

2001. Gender and Ethnicity in Science. 3. Covers factors affecting the performance and retention of women and ethnic minority students in science careers, and science as a social construct. Cross listed with WMST 2001.

2060. Special Topics in _____. 3. Special topics course through which regular or visiting faculty can present progress regarding specialized or new topics.

2360. Mexican American Literature. 3. [C1, G1↔CH, D] Discusses literary reflections of Chicanismo. Studies literature of the Hispanic Southwest, Mexican American folklore and the Chicano and post-Chicano movement. Cross listed with ENGL 2360. *Prerequisite:* WA.

2370. Chicano History : Origins to 1900. 3. [C2, G1↔CS, D] General survey that traces the geographic distribution and historical processes that have shaped the life experiences, socio-economic development and cultural contributions of peoples of Mexican descent in the United States from their indigenous and Hispanic origins to the end of the 19th century. Cross list with GEOG 2370/HIST 2370.

2385. Chicano History: 1900 to Present. 3. [C2, G1↔(none)] General survey of the history of the Mexican American Chicano people in the United States. Examines the origins and development of Mexican Americans, Chicanos through the major historical processes which have shaped their experience. Major themes include multicultural, multiethnic context, origins; changing identity, comparative relations to other social, ethnic groups, culture, social structure, politics, economy, immigration, and the influence of United States-Mexico relations. Cross listed with HIST 2385.

3080. Southwest Spanish. 3. Examines the dialects of Southwest Spanish and explores their development from the Spanish conquest to the present, focusing on the linguistic systems themselves as well as on the historical, political and social factors that have influenced the development of the various dialects. Cross listed with SPAN 3080. *Prerequisite:* SPAN 1020 or equivalent proficiency.

3200. Perspectives in Chicana Studies 3. An interdisciplinary introduction to the study of the history, culture, gender relations, and contemporary political, economic status of Chicana/Mexican American women. Examines the origins, development of Chicana studies as a major emphasis in Chicano/Chicana studies. Cross listed with WMST 3200. *Prerequisite:* CHST 1100.

3560. Chicano Community Organizations. 3. [C2↔(none)] Introduction to the origins, development and contemporary status of community organizations and service agencies in the Mexican American community in general and in the Wyoming and Rocky Mountain regions. *Prerequisite:* CHST 1100.

3800. Chicanas/os in Contemporary Society. 3. [(none)↔CS, D] Focuses on three major movements within the Chicana/o community; labor, nationalism, and feminism. Students will assess these three movements to determine what role they have played in transforming the social conditions and political identity of the Chicana/o and Latina/o population in the US. Cross listed with SOC/WMST 3800. *Prerequisite:* CHST 1100 or SOC 1000 or WMST 1080.

4470. Studies in Chicano Folklore. 3. [C1, G1↔CH, D] Provides a survey of the origins, development and contemporary folklore of the Mexican American Chicano people of the United States with comparative relation to Mexico and other groups in the United States. Cross listed with ENGL 4470. *Prerequisites:* CHST 1100 and WA.

4485. U.S. Latino Diaspora. 3. [G1↔(none)] Combines classroom activities and a week-long stay abroad in examining the historical creation and contemporary spread of the Latino Diaspora from the Caribbean to the Yucatan and beyond. U.S. Latina/o history, multiculturalism, pan-Latino identity, assimilation, migration trends and natives responses are stressed. Cross listed with HIST/INST 4485. *Prerequisite:* 9 hours of CHST, HIST, and/or INST related coursework.

4496. History of Mexico. 3. [C2, G1↔(none)]

Intensive course in Mexican development. Emphasizes the 20th century, especially the Mexican Revolution of 1910, showing how this nation transformed itself into a modern nation-state. Includes diplomatic relations with the U.S., incorporation of Indians, church-state relations, uses of land and other natural resources, role of the military and growth of Mexican nationalism. Cross listed with HIST 4496. *Prerequisite:* HIST 2380. (Normally offered fall semester)

4525. American Southwest. 3. Explores the Southwest as the location of cultural encounters and conflicts. Focuses on the cross-cultural interchange between American Indians, Mexican Americans and Anglo Americans from the fifteenth century to the present. Cross listed with AIST/HIST 4525. *Prerequisite:* HIST 1210/1211, 1220/1221. (Normally offered spring semester)

4546. Agriculture: Rooted in Diversity. 3. [(none)↔C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AAST/AGRI/AIST/ENGL/FCSC/HIST/AMST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4975. Independent Studies. 1-3 (Max 6). Independent study in Chicano studies research. *Prerequisite:* junior standing.

4990. Topics in Chicano Studies. 1-3 (Max 6). A special topics course through which regular and visiting faculty can explore regarding specialized or new research topics regarding Chicano studies. *Prerequisite:* junior standing.

Communication and Journalism

428 Ross Hall, 766-3122/6277

FAX: (307) 766-5293

Web site: www.uwyo.edu/COJO

Department Chair: Ken Smith

Professors:

MICHAEL R. BROWN, B.A. Wayne State College 1974; M.A. University of Wyoming 1984; Ph.D. University of Utah 1994; Professor of Communication and Journalism 2007, 1994.

GEORGE A. GLADNEY, B.A. Waynesburg College 1969; B.J. University of Missouri 1971; M.S. University of Oregon 1988; Ph.D. University of Illinois Champaign-Urbana 1991; Professor of Communication and Journalism 2005, 1995.

FRANK E. MILLAR, B.A. Wabash College 1966; M.A. Michigan State University 1971; Ph.D. 1973; Professor of Communication and Journalism 1989, 1985.

CONRAD SMITH, B.S. Ohio State University 1969; M.A. 1971; Ph.D. Temple University 1981; Professor of Communication and Journalism 1996.

KENNETH L. SMITH, B.S. Iowa State University 1970; M.S. 1973; Ph.D. University of Utah 1991; Professor of Communication and Journalism 2005, 1991.

Associate Professor:

GRACIE LAWSON-BORDERS, B.A. Michigan State University 1982; M.A. Northwestern University 1995; Ph.D. Wayne State University 2001; Associate Professor of Communication and Journalism, African American Studies 2006.

TRACEY OWENS PATTON, B.A. Colorado State University 1993; M.A. 1996; Ph.D. University of Utah 2000; Associate Professor of Communication and Journalism 2008, 2003.

CINDY J. PRICE, B.A. University of Sioux Falls 1989; M.S. South Dakota State University 1992; Ph.D. Southern Illinois University 2000; Associate Professor of Communication and Journalism 2008, 1999.

Assistant Professors:

EILEEN S. GILCHRIST, B.A. University of Houston 1990; M.S. 1997; Ph.D. University of Oklahoma 2008; Assistant Professor of Communication and Journalism 2007.

CHIA FANG HSU, B.A. Chinese Culture University 1995; M.A. Washington State University 1997; Ph.D. Washington State University 2002; Assistant Professor of Communication and Journalism 2003.

Senior Lecturers:

REBECCA ROBERTS, B.S. University of Wyoming 1993; M.A. 1995; Senior Lecturer of Communication and Journalism 2005, 1999.

MATTHEW J. STANNARD, B.S. Brigham Young University 1993; M.S. California State University, Long Beach 2000; Senior Lecturer of Communication and Journalism 2005, 1999.

CAROL L. TARANTOLA, B.A. University of Wyoming 1972; M.A. 1974; Senior Lecturer of Communication and Journalism 1996, 1990.

ERIC WILTSE, B.A. State University College at Buffalo 1974; M.A. University of Montana 1983; Ph.D. University of Wyoming 2000. Publisher of *Laramie Online*; Senior Lecturer of Communication and Journalism 2001, 1990.

Assistant Lecturers:

BEAU BINGHAM, B.S. Idaho State University 2000; M.A. New Mexico State University 2002; Assistant Lecturer of Communication and Journalism 2007.

Visiting Lecturers:

Bob Beck, Mike McElreath, Justin Stewart, Shalee Turner

Emeriti:

B. Wayne Callaway, William C. Donaghy, John W. Ravage

The Department of Communication and Journalism provides a broad range of professional and research courses, offering a sound interdisciplinary academic program for students who plan careers in communication or mass media. Courses are comprised of writing, speaking and analyzing messages; forms of interpersonal communication; mass media effects and audiences' interpretations of media messages and images. Degrees are granted in communication and journalism with academic specialties in each of the degree areas. These specialties include news-editorial, public information (public relations and advertising), communication studies and organizational communication. Students are given academic preparation in communication skills (media writing and public speaking), coupled with opportunities for professional experience in their majors. The department also offers minors in public relations, communication and journalism for non-majors.

Marketing, Facilities and Research Activities

The department encourages majors to work actively in print media. The department offers unique professional opportunities for students with the student newspaper, *The Branding Iron*; and *Laramie Online*, an online newspaper.

Oral Communication Center, Ross Hall 442. A resource for the entire University Community. The lab is open for anyone required to present material orally. Lab instructors offer assistance at any stage in the process—from topic selection, purpose statements and gathering materials—to organizing, outlining and rehearsal. They can help alleviate speech anxiety that may prevent or inhibit some individuals from achieving their overall academic or career goals. Clients can have their presentations video-taped for critical input and evaluation as well as for portfolio or interview applications.

Wyoming Internet Student Radio (WISR). The department operates a web-based student radio station that offers a diversity of on-demand audio programs. Students learn desktop digital audio editing skills and the use of web-based audio.

Forensics. The department conducts a nationally recognized program of Cross Examination Debate Association (CEDA) and parliamentary debate, as well as eleven National Individual Events Tournament (NIET) events. Teams and individuals representing the university attend more than 20 national intercollegiate tournaments a year. Participation in the forensics program is open to all University of Wyoming students on a credit (COJO 2060) or non-credit basis.

Laboratories. The department has computer and research laboratories that support the professional, academic and research programs. These include a computer lab, electronic newspaper lab, photojournalism studio, and digital (audio and video) production lab.

Research. The department encourages undergraduate and graduate research. Faculty and students participate in research projects in social, cultural and political aspects related to mass media, interpersonal and organizational processes.

Internships. Journalism majors are required to complete internships in their field. Communication majors are encouraged to complete internships in their field. In addition to working with *Laramie Online*, and the *Branding Iron*, students complete internships with state, regional, and national weekly and daily newspapers; advertising and public relations agencies; non-profit organizations; businesses, professional and university sports organizations; and governmental agencies. *Note:* a maximum of 6 hours in COJO 3480 and 4990 count as fulfillment of the requirements for a major. All remaining hours will count toward graduation as upper-division hours.

Student Organizations

Professional Organizations. The department has chapters of the Society of Professional Journalists and Delta Sigma Rho, the national forensics honorary, and Lambda Pi Eta.

Student Activity. Within the department, student representatives participate on faculty committees where they assist in forming policies of the department.

The Branding Iron. The daily campus newspaper is independently managed by students at UW. It provides professional experiences for reporting, editorial, photojournalism, publication design and advertising.

The Owen Wister Review. The literary and arts magazine is published twice a year. Independently managed and produced by university students, it features poetry, short stories, essays, photography and artwork.

The Frontiers Magazine. Published twice a year, the magazine is independently managed by UW students. Containing general interest content, the publication offers students opportunities to improve their professional skills in feature writing, in-depth reporting, photography, layout, design, advertising and marketing. Like the *Branding Iron* and *Owen Wister Review*, *Frontiers* is published under the auspices of UW Student Publications.

Scholarships and Awards

The department has several scholarships available to qualified students. Check the Communication and Journalism web site for additional information.

Graduate Program

The department offers a graduate program leading to a Master of Arts degree. A description of the graduate program may be found in the *Graduate Bulletin*. Students interested in pursuing graduate study should contact the graduate studies director.

Undergraduate Programs

The department offers courses leading to baccalaureate degrees in communication and journalism.

Students majoring in the department are required to earn a grade of C or better in departmental required courses. Students may not take a course for S/U credit to satisfy requirements of the major.

Departmental Core Courses

In addition to the university studies requirements listed in this bulletin, all students majoring in communication and journalism must take the four departmental core courses.

Required Courses	Hrs.
COJO 1000 Intro to Mass Media.....	3
COJO 2100 Reporting & Newswriting.....	3
COJO 3070 Intro to Comm Resrch	3
STAT 2070	4

Communication Major

Communication is a liberal arts degree relevant to a variety of careers in community relations, public relations, politics, administration, law, sales management and human resource management.

Required Courses	Hrs.
Departmental core courses.....	13
COJO 1010 Public Speaking	3
COJO 1040 Intro to Human Comm	3
COJO 3010 Business/Prof Comm	3
COJO 3040 Advanced Comm Thy.....	3
Departmental electives.....	18
(At least 15 elective hours must be upper division)	

Journalism Major

The journalism major is designed to prepare students for careers as reporters, editors and writers with urban newspapers, community newspapers, news services, magazines, public information, public relations and advertising.

Required Courses	Hrs.
Departmental core courses.....	13
COJO 2400 Intro to Photography	3
COJO 3200 Graphics of Comm or	
COJO 3480 Internships.....	1-12
COJO 4120 News Editing	3
COJO 3530 Online Journalism	3
COJO 4500 Mass Communication Law.....	3
Departmental electives.....	15

At least 12 elective hours must be upper-level and at least 6 hours must be from one of the following specialty areas:

News-Editorial

- COJO 3100 Public Affairs Reporting
- COJO 4100 Investigative Reporting

Advertising

- COJO 3300 Advertising
- COJO 4300 Advertising Campaigns

Public Relations

- COJO 3310 Public Relations
- COJO 4310 Public Relations Campaigns

Photojournalism

- COJO 4200 Visual Communication
- COJO 4400 Photojournalism

Minors

The department offers minors in public relations, journalism, communication, and marketing communication for non-majors. For further information, contact the Department of Communication and Journalism.

Communication and Journalism (COJO)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1000 [CMJR 1000; CO/M 1000]. Introduction to Mass Media. 3. [C2♦CS] An overview of mass media, newspapers, magazines, books, radio, television and films. Studies mass media's historical development, emphasizing understanding techniques of expression and impact on American culture. Surveys content of mass media; considers contemporary problems and trends. (Offered fall, spring and summer)

1001 [CMJR 1001]. Issues in the Mass Media. 1. [(none)♦I, L] An examination of important, relevant, and timely issues as they relate to the mass media. *Prerequisite:* concurrent enrollment in COJO 1000.

1010 [CMJR 1010; CO/M 1010]. Public Speaking. 3. [C3♦O] Beginning public speaking course. Emphasizes message construction, performance and critique in public communication settings. Includes speech preparation, listening, audience analysis, critical thinking, language/nonverbal behavior and various speaking formats. Students are required to complete a minimum of five oral presentations of various types. (Offered fall, spring and summer)

1020 [CMJR 1020]. Communication and Civic Engagement. 3. [(none)♦O] Designed to complement a course from another discipline by engaging students in civic discourse within that context. Students identify issues, study related rhetorical strategies, determine target audiences and develop communication with a venue and target audience to be determined by the class. *Prerequisites:* none, but each section of course will require concurrent enrollment with a course in a different discipline.

1030 [CMJR 1030; CO/M 1030]. Interpersonal Communication. 3. [C2♦(none)] Focuses on interpersonal communication settings or face-to-face interaction. Basic unit of study is, therefore, the dyad. Also includes some work in small group settings. (Offered fall, spring and summer)

1040 [CMJR 1040; CO/M 1040]. Introduction to Human Communication. 3. [C2♦CS] Introduces theories and research of social and behavioral scientists on communication process. Orients beginning communication students by focusing on concepts and issues central to human communication. (Normally offered fall, spring and summer)

1041 [CMJR 1041]. Issues in Human Communication. 1. [(none)♦I, L] An examination of important, relevant, and timely issues as they relate to the theoretical base of human communication. *Prerequisite:* concurrent enrollment in COJO 1040.

2060 [CMJR 2060; CO/M 2060]. Forensics Practicum. 1 (Max. 8). *Prerequisite:* consent of forensics director. (Offered fall and spring semesters)

2090 [CMJR 2090; CO/M 2090]. Persuasion. 3. [C2♦(none)] Studies human communication as a change agent. Emphasizes relationships of attitudes to behavior, behavioral research and contemporary theories. *Prerequisite:* COJO 1030 or 1040. (Offered spring semester)

2100 [CMJR 2100; CO/M 2100, 1100]. Reporting and Newswriting. 3. [W2♦WB] Beginning newswriting. Practices development of news sources, selection and information organization. Variations in types of news. Covers development and trends of journalistic forms. Intensive practice in gathering and writing news. *Prerequisite:* WA writing course. (Offered fall and spring semesters)

2110 [CMJR 2110; CO/M 2110]. Nonverbal Communication. 3. [C2♦(none)] Studies influence of nonverbal behavior in communication. Students have opportunities to further their

understanding of relationship between verbal and nonverbal communication. *Prerequisite:* COJO 1030 or 1040. (Normally offered fall semester)

2120 [CMJR 2120; CO/M 2120]. Small Group Communication. 3. Presents communication behavior in small group situations: networks, dynamics, leadership roles, member functions and decision-making behavior. *Prerequisite:* COJO 1030 or 1040. (Offered fall semester of even-numbered years)

2150 [CMJR 2150; CO/M 2150]. Argumentation. 3. [C1♦CH] Studies argumentation principles. Emphasizes reasoning, evidence, case construction and effective presentation in bringing about belief and conviction. Practical applications by participation in debates on various social and political questions. *Prerequisite:* COJO 1030 or 1040. (Offered based on sufficient demand and resources)

2170 [CMJR 2170; CO/M 2170]. Broadcast Writing. 3. [W2♦(none)] Practices techniques of writing, interviewing and delivering news stories for radio and television. Intensive practice in gathering and producing broadcast news. *Prerequisites:* WA writing course and COJO 2200. (Offered fall semester)

2200 [CMJR 2200; CO/M 2200]. Broadcast Production. 3. Introduces fundamental technical and production concepts in radio, television and motion pictures. Emphasizes actual experience with equipment and understanding of its operation. *Note:* This course is a prerequisite to all production courses. (Normally offered spring semester)

2250 [CMJR 2250; CO/M 2250]. Communication in Organizations. 3. Studies communication patterns, roles, channels, and their effects within various organizational structures: social, political, professional, industrial, etc. *Prerequisite:* COJO 1030 or 1040. (Offered spring semester of even-numbered years)

2260 [CMJR 2260; CO/M 2260]. Interviewing. 3. Practices principles and methods of eliciting and imparting information through interviewing in both private and public situations. Stresses techniques and methods used in employment in professional situations. *Prerequisite:* COJO 1030 or 1040. (Offered based on sufficient demand and resources)

2400 [CMJR 2400; CO/M 2400]. Introduction to Photography. 3. [C3♦CA] Basic course in still photography. Includes laboratory practice in techniques of camera use, composition, processing and use of photographs. (Offered fall, spring and summer)

2470 [CMJR 2470; CO/M 2470]. History of the Cinema. 3. [C3♦(none)] Studies development of the film as a medium of mass communication. Wide variety of films are seen in the class ranging from the silent era to today. (Offered spring semester of even-numbered years)

2480 [CMJR 2480; CO/M 2480]. Politics and Media. 3. [C2♦(none)] Examines media's coverage of current events, governmental institutions and electoral campaigns. Discusses effect of media on individuals' opinions and behavior. Identical to POLS 2450. *Prerequisite:* COJO 1000, 1040 or POLS 1000. (Offered spring semester of odd-numbered years)

3000 [CMJR 3000; CO/M 3000]. History of American Journalism. 3. Presents history and development of American journalism from colonial times to present, emphasizing 20th century. *Prerequisite:* COJO 1000. (Offered spring semester of even-numbered years)

3010 [CMJR 3010; CO/M 3010]. Business and Professional Communication. 3. Studies theories and techniques of professional communication activities including interviewing skills, group processes, and professional presentations; for students who are beyond elementary oral communication level. Students develop oral communication skills through projects and presentations. *Prerequisite:* COJO 1010. (Offered fall and spring semesters)

3040 [CMJR 3040; CO/M 3040]. Advanced Communication Theory. 3. Considers nature of human communication theories. Analyzes problems in developing communication theory based on current social science methods. *Prerequisites:* COJO 1040 and 6 additional hours in department. (Offered fall semester)

3070 [CMJR 3070; CO/M 3070]. Introduction to Communication Research. 3. [M3♦(none)] Focuses on problems in communication and mass communication research. Specifically studies and applies language of science, basic concepts of communication, mass communication research, types and limitations of empirical research, as well as measurement procedures and analysis. *Prerequisites:* COJO 1000 or 1040 and STAT 2070. (Offered fall semester and normally offered spring semester)

3100 [CMJR 3100; CO/M 3100]. Public Affairs Reporting. 3. Practices in public affairs reporting, emphasizing local and state political organization as foundation for such reporting. Specialized reporting fields. News analysis. *Prerequisite:* COJO 2100. (Offered fall semester)

3160 [CMJR 3160; CO/M 3160]. Theory of Language and Society. 3. [W3♦WC] Considers contributions to communication theory from linguistics, sociolinguistics, sociology, social psychology and anthropology to understanding a spoken language. *Prerequisites:* COJO 1040 and 6 additional hours in the department. (Offered spring semester)

3170 [CMJR 3170; CO/M 3170]. Broadcast Journalism. 3. [W3♦(none)] An overview of the techniques of broadcast news professionals, to report and deliver stories on-air. Includes intensive practice in writing, reporting and reading news stories for radio and television. *Prerequisite:* COJO 2100. (Offered fall semester)

3190 [CMJR 3190; CO/M 3190]. Cross-Cultural Communication. 3. [(none)↔D] Studies human communication processes within the context of various cultures and subcultures. Opportunity for field study of the effect of culture on communication behavior. *Prerequisite:* COJO 1040. (Offered fall semester)

3200 [CMJR 3200; CO/M 3200]. Graphics of Communication. 3. [C3↔CA] Combines editing and design. Studies evaluation, selection and editing of magazine and newspaper news copy. Practice in publication design, including headline writing, printing methods, page layout and other display techniques. *Prerequisite:* COJO 1000. (Offered every other semester)

3270 [CMJR 3270; CO/M 3270]. Television Producing and Directing. 3. Studies principles and techniques of television production, including practical experience and presentation in basic program preparation. *Prerequisite:* COJO 2200. (Offered fall semester)

3280 [CMJR 3280; CO/M 3280]. Radio Producing and Directing. 3. Studies principles and techniques in audio production. News, special events, documentaries, and drama are organized, planned, produced and directed. *Prerequisite:* COJO 2200. (Normally offered fall semester)

3300 [CMJR 3300; CO/M 3300]. Advertising in the Media. 3. Studies fundamentals of copywriting in mass communication. Provides study and practice in the psychology of advertising, audience direction, advertising appeals, strategy, and structure of ads and commercials. Includes exercises in basic principles of copywriting for print and electronic media. *Prerequisite:* COJO 2100 or 2170. (Offered fall semester)

3310 [CMJR 3310; CO/M 3310]. Public Relations. 3. Studies mass media effects on audiences and audiences' involvement in and interpretation of mass media content. Discusses public opinion and mass media concepts as conceptual framework for public relations, advertising and other public information fields. *Prerequisite:* COJO 2100 or 2170. (Offered fall semester)

3470 [CMJR 3470; CO/M 3470]. History of Documentary Film. 3. [C3↔(none)] Provides history and overview of origin, development and evolution of documentary films, focusing on U.S., British and Canadian films. Examines documentary function, form, production techniques, as well as present and future role in the global community. *Prerequisites:* COJO 1000 and junior standing. (Offered fall semester of even-numbered years)

3480 [CMJR 3480; CO/M 3480]. Internship. 1-12 (Max. 12). Review and evaluation of approved internship experience. At the conclusion, students must submit a journal containing work samples and a critique of their performance and internship experience. Maximum of 6 hours of internship credit can be used to fulfill requirements of the major. *Prerequisites:* signed contract and 9 hours in the department. (Offered fall, spring and summer)

3520 [CMJR 3520; CO/M 3520]. Communication Technology and Society. 3. [C2↔(none)] Studies role of communication technology in functioning of society. Examines history of effects on personal growth, self-concept, world view, creative thinking, personal relationships and social processes. *Prerequisite:* COJO 1000 or 1040. (Offered spring semester)

3530 [CMJR 3530; CO/M 3530]. Online Journalism. 3. How to produce content for online media and use the web as a tool for mass media work. Course provides experience in designing web pages, writing for hypermedia and digital imaging; covers history, ethical issues and trends in online journalism, photography, broadcasting, public relations and advertising. *Prerequisite:* COJO 2100 or other instructor approved WB course.

4000 [CMJR 4000; CO/M 4000]. News-Making Processes. 3. The study of the processes underlying the production of news in the mass media with special emphasis on how those processes affect the news and have an impact on society. Examines the function of news, values, and objectivity in the news, outside influences, and news as entertainment. Dual listed with COJO 5000. *Prerequisites:* COJO 1000 and 9 hours in the department.

4020 [CMJR 4020; CO/M 4020]. Mass Media and Society. 3. [C1↔(none)] Studies ethical and related problems of mass communication from contemporary and historical viewpoints. Critical analysis of the performance of the mass media. *Prerequisites:* COJO 1000 or 1040 and 6 hours in the department. (Offered fall semester of even-numbered years)

4030 [CMJR 4030; CO/M 4030]. Advanced Interpersonal Communication. 3. Studies research and theory in interpersonal relationships; formation and maintenance of friendships; marriages; and group relationships. *Prerequisites:* COJO 1040 and 6 hours in the department. (Offered fall semester of odd-numbered years)

4050 [CMJR 4050; CO/M 4050]. Communication and Conflict. 3. Studies research and theory concerning communication in conflict development and management. Examines forms of conflict, including occurrences in interpersonal, group, organizational and cultural contexts. *Prerequisites:* COJO 1000 or 1040 and 6 hours in the department. (Offered fall semester of odd-numbered years)

4061. Rhetorical Theory and Criticism. 3. An investigation into how rhetorical theory, spanning from its ancient roots in Aristotelian thinking to its current postmodern components, operates in society. Explores how various critical methods can be utilized to gain a stronger understanding of public communication texts, including newspapers, speeches, music and film. Cross listed with ENGL 4061; dual listed with COJO 5061. *Prerequisites:* COJO 1040 and 3040 or ENGL 2035.

4100 [CMJR 4100; CO/M 4100]. Investigative Reporting. 3. [W3↔WC] Practices developing and writing articles of depth and substance in areas of public concern. Emphasizes careful research, weighing conflicting viewpoints, interpreting complex issues and critical evaluation. *Prerequisite:* COJO 3100. (Offered spring semester)

4110 [CMJR 4110; CO/M 4110]. Feature Writing Seminar. 3. [W3↔(none)] Extensive practice in such specialized forms of writing as editorials, commentaries, reviews and magazine articles. Content varies. Critically analyzes such writing. *Prerequisites:* COJO 3100 and 6 hours in the department. (Offered fall semester)

4120 [CMJR 4120]. News Editing. 3. Students develop skills in editing copy for newspapers and magazines. Focus is on copy editing for grammar, syntax, style, clarity, spelling, word usage, fairness and balance, conciseness, and accuracy. Students also learn to write effective headlines and cutlines, do effective design and layout of tabloid and broadcast pages, and create effective information graphics and photo features. *Prerequisite:* COJO 2100.

4140 [CMJR 4140; CO/M 4140]. Nonverbal Communication Studies. 3. Critical analysis of current studies in the area of nonverbal communication. Students are required to complete an independent study of some aspect of nonverbal communication relevant to interests. Dual listed with COJO 5140. *Prerequisites:* COJO 2110 and junior standing.

4150 [CMJR 4150; CO/M 4150]. Legal Communication. 3. Provides a better understanding of how communication affects and is affected by our legal institutions and processes. *Prerequisite:* COJO 2150. (Offered spring semester of odd-numbered years)

4160. African American Rhetoric. 3. [(none)↔CH] African American discourse and its relationship to equality and participation. Using the struggle of African Americans as an instructive exemplar, it will come to terms with the philosophical concepts, political issues, moral complexities, and discursive characteristics of African American Rhetoric. Cross listed with AAST 4160. *Prerequisites:* AAST 1000 and AAST 3010, or COJO 1040, COJO 4210; graduate students: permission of instructor.

4170 [CMJR 4170; CO/M 4170]. Advanced Media Writing. 3. [W3↔(none)] Analyzes documentary and dramatic writing for radio and television. Practical writing projects. Whenever possible, scripts are produced. *Prerequisite:* WB writing course.

4200 [CMJR 4200; CO/M 4200]. Visual Communication. 3. Studies principles of vision that help explain how humans process information. Content includes perception, organization of information, spatial factors, cultural factors, motion, vectors and color. Specifically emphasizes visual processing of information relating to mass media. *Prerequisite:* COJO 1000. (Offered spring semester of odd-numbered years)

4210 [CMJR 4210; CO/M 4210]. Special Topics in Communication. 1-3 (Max. 6).

Intensive study of such special problems and topics in human communication processes as gender relations, power dynamics, family and political communication. Content varies. Dual listed with COJO 5210. *Prerequisites:* COJO 1040 and 9 hours in the department.

4230 [CMJR 4230; CO/M 4230, 4910]. Special Topics in Mass Media. 1-3 (Max. 6).

Intensive study of problems and topics specific to the mass media, including print, broadcast, advertising, public relations, and the Internet. Course content varies and may include historical, legal, ethical, political, sociocultural, economic, and theoretical perspectives. Dual listed with COJO 5230. *Prerequisites:* COJO 1000 and 9 hours in the department.

4250 [CMJR 4250; CO/M 4250]. Advanced Organizational Communication. 3.

Studies communication processes in political, educational, industrial, medical and nonprofit organizations. Emphasizes in-depth analysis of theories and methods of organizational research and practice. *Prerequisites:* COJO 2250 and 3070. (Offered spring semester of even-numbered years)

4270 [CMJR 4270; CO/M 4270]. Advanced Television Production. 3.

Studies details of directing, editing and single camera television production. Requires production of several original short television programs. *Prerequisite:* COJO 3270. (Offered spring semester)

4280 [CMJR 4280; CO/M 4280]. Advanced Radio Production. 3.

Advanced project course in audio production work. Concentrates on production of high quality and professional sounding audio productions using voices, music and sound effects. Emphasis on creativity. *Prerequisite:* COJO 3280. (Offered spring semester)

4300 [CMJR 4300; CO/M 4300]. Advertising Campaigns. 3.

Reviews current national, regional and local advertising practices in various media. Develops understanding of advertising agency and/or advertising department. Students prepare an advertising campaign using creative and marketing strategies on regional or national level. *Prerequisite:* COJO 3300. (Normally offered spring semester)

4310 [CO/M 4310]. Public Relations Techniques. 3.

Practical application of public relations writing, planning and program implementation. Includes exercises in writing news releases, structuring news conferences and writing preliminary and formal public relations strategies. The plans also incorporate advertising and marketing segments for external publics, newsletter design, editing and interpersonal relations. *Prerequisite:* COJO 3310. (Offered spring semester)

4370 [CMJR 4370; CO/M 4370]. TV News Programming. 3.

Gathering, reporting, performing and producing. Students produce three half-hour (live-on-tape) shows. Lecture and discussion topics include performance, voice quality, shooting, editing, news gathering and research,

ethics, newsroom organization and management, and the role of TV news in the local community. *Prerequisites:* COJO 3170 and 4270.

4400 [CMJR 4400; CO/M 4400]. Photo-journalism. 3. [C3♦(none)]

Studies and intensively practices reporting news and features photographically, plus essentials of advertising photography. Includes advanced camera and darkroom techniques and photo editing. Two one-hour lectures and one two-hour laboratory weekly. *Prerequisite:* COJO 2400. (Offered spring semester of even-numbered years)

4500 [CMJR 4500; CO/M 4500]. Mass Communication Law. 3.

Studies development of First Amendment law. Includes practical application of law to mass media practice; relationship of legal and social responsibilities of the mass media; and problems of law and regulation, such as constitutional, statutory and administrative. *Prerequisites:* COJO 1000 and 2100. (Offered fall semester)

4590 [CMJR 4590; CO/M 4590]. Advanced Persuasion. 3.

Participants in this seminar engage in dialog directed toward both (1) understanding the issues raised in contemporary persuasion research and (2) exploring potential solutions and ideas for future research. This seminar should prompt participants to begin their own research ventures designed to contribute to the study of communication and social influence. Dual listed with COJO 5590. *Prerequisites:* COJO 2090 and 3070.

4600 [CMJR 4600; CO/M 4600]. Mass Media Ethics. 3.

Studies ethical theory, emphasizing how it can be applied to problem solving in the media. Examines major ethical perspectives and requires application to actual case studies. Dual listed with COJO 5600. *Prerequisite:* 6 hours at 3000-level in the department. (Offered spring semester of even-numbered years)

4630 [CMJR 4630; CO/M 4630]. Ethics in Personal Relationships. 3.

Examines personal relationships and the ethical issues participants in these relationships encounter. Personal relationships are those unique relationships in which the participants cannot be replaced without altering the very nature of the relationship. Personal relationships are originated, developed, maintained and dissolved through communication between the participants. Dual listed with COJO 5630. *Prerequisite:* COJO 4030. (Offered spring semester of odd-numbered years)

4800 [CMJR 4800; CO/M 4800]. Media Management. 3.

Discusses station and program orientation, market studies, law, policies, programming, public relations and public responsibilities. *Prerequisites:* COJO 2100 or 2170 and 6 hours in the department. (Offered fall semester of odd-numbered years)

4985. Rhetoric and Social Justice. 3.

Analyzes concepts of ableism, anti-Semitism, heterosexism, racism, sexism, and socioeconomic class through a critical/social construction framework. It attempts to develop a "working" definition of these concepts by analyzing historical and current

conceptualizations and identifying marginalization and disenfranchisement as it is woven in the fabric of American society. Dual listed with COJO 5985. *Prerequisites:* undergraduate students, COJO 2150, 3040; graduate students, graduate standing.

4990 [CMJR 4990; CO/M 4990]. Independent Study in Communication. 1-3 (Max. 6).

Prerequisites: 15 hours in the department and consent of department chair.

Criminal Justice

223 Arts and Sciences Building,
766-2988

FAX: (307) 766-3913

Web site: www.uwyo.edu/cj

Department Head: K. Gary Sherman

Professors:

MARGARET M. MURDOCK, B.A. Creighton University 1970; M.A. Tufts University 1975; Ph.D. 1978; Professor of Political Science and Criminal Justice – Casper 1993, 1975.

NARINA N. NUNEZ, B.A. State University of New York-Cortland 1980; M.S. 1984; Ph.D. Cornell University 1987; Professor of Psychology and Criminal Justice 2000, 1987.

Associate Professors:

ADRIENNE B. FRENG, B.A. Black Hills State University 1995; M.A. University of Nebraska 1997; Ph.D. 2001; Associate Professor of Criminal Justice 2007, 2001.

ED A. MUÑOZ, A.A. Western Nebraska Community College 1987; B.A. University of Nebraska Lincoln 1990; M.A. 1992; Ph.D. 1996; Associate Professor of Criminal Justice 2007, 2003.

Assistant Professors:

SCOTT E. CULHANE, B.A. University of Tennessee 1998; M.S. University of Tennessee at Chattanooga 2000; Ph.D. University of Texas at El Paso 2005; Assistant Professor of Criminal Justice 2005.

CARY HECK, B.S. Pittsburg State University 1989; M.A. San Jose University 1994; Ph.D. Washington State University 1998; Assistant Professor of Criminal Justice 2004.

ERIC J. WODAHL, A.A. Eastern Wyoming College 1992; B.A. Chadron State College 1994; M.P.A. University of Wyoming 2003; Assistant-Professor of Criminal Justice 2008.

Senior Lecturers:

CHERYL C. BURNETT, B.A. University of Wyoming 1975; J.D. 1981; Senior Lecturer of Criminal Justice 2008, 2000.

K. GARY SHERMAN, B.S. University of Missouri 1972; M.S. Southwest Missouri University 1975.

Assistant Lecturer:

ERNEST L. JOHNSON, A.A.S. Law Enforcement 1975; B.S. University of Wyoming 1992; M.P.A. 1997; Assistant Lecturer for Criminal Justice 2001.

Adjunct Professors:

(See bulletin section following name for academic credentials.)

George Blau, psychology

George W. Gill, anthropology

William H. Moore, history

Students majoring in criminal justice will be involved in a critical examination of the sources of criminal behavior and the social and political institutions and processes designed to control criminal behavior. Criminal justice majors are offered at University of Wyoming campuses in Laramie and Casper, as well as through the Outreach School.

Undergraduate Major

Students pursuing a B.A. in criminal justice must fulfill university studies and college requirements as listed in this bulletin, satisfy required prerequisites to courses in the major program and complete a minimum of 33 credit hours in the major. Each student must complete 9 hours of foundation classes, 18 hours of required core courses and 6 hours of electives in the major. Only courses in which a grade of C or better has been earned may be used to satisfy major requirements.

Foundation Classes:	Hrs.
CRMJ 1001	3
CRMJ 2210	3
CRMJ/SOC 2400	3
Total Hours	9

Required Core:

Students are required to take two courses in each of the following three areas:

Crime and Deviance	Hrs.
CRMJ 3150	3
CRMJ/SOC 3250	3
CRMJ 4260	3
CRMJ/PSYC 4370	3
CRMJ 4890	3

Criminal Justice institutions

CRMJ 3350	3
CRMJ 3490	3
CRMJ 4130	3
CRMJ/SOC 4280	3
CRMJ 3500	3

Criminal Justice Processes:

CRMJ/POLS 3100	3
CRMJ 3110	3
CRMJ 4140	3
CRMJ 4720	3
CRMJ/PSYC 4730	3
Total Hours	18

Electives

These courses may be taken at any level. They may come from additional courses listed above in the required core or from the following approved list of electives:

CRMJ 3200, CRMJ/SOC 3320, CRMJ/SOC 3400, CRMJ 3680, CRMJ/POLS 4110, CRMJ/POLS 4120, CRMJ/ANTH 4230, CRMJ/SOC 4250, CRMJ/SOC 4270, CRMJ/SOC 4540, CRMJ/POLS 4600, CRMJ 4750, CRMJ/PSYC 4760, CRMJ/HIST 4810, CRMJ 4965, CRMJ 4970, CRMJ 4975, CRMJ 4990

Forensic Science Concentration

The Criminal Justice Department offers a Forensic Science Concentration for Criminal Justice majors that consists of courses selected from several departments across the university. These inter-disciplinary courses are intended to provide a base knowledge of the field of forensic science for future educational and employment opportunities.

27 hours must be completed from among the following courses. Of these 27 hours, 14 must be upper division (3000 level or above) and 6 hours of elective coursework either from the Criminal Justice or the Forensic Science Concentration curriculum. Life Sciences 1010 and Chemistry 1020, General Chemistry I, must be taken to fulfill the University Studies Program lab science requirement.

Analytical Techniques

(minimum 10 hours)

ANTH/CRMJ 4230 Forensic Anthropology **or**
 ANTH 4240 Forensic Anthropology Lab
 CHEM 2230 Quantitative Analysis
 CHEM 4230 Instrumental Methods
 of Chemical Analysis
 CHEM 3550 Physical Chemistry
 for the Life Sciences **or**
 CHEM 4507 Physical Chemistry I **or**
 CHEM 4508 Physical Chemistry II
 PATB 4140 Principles of Toxicology
 MOLB 4170 Cloning & DNA
 Sequencing Laboratory
 MOLB 4260 Quantitative Microscopy
 MOLB 4400 Immunology
 MOLB 4440 Microbial Genetics
 MOLB 4490 Microbial Gene
 Expression Laboratory
 ZOO 4425 Genetic Markers

Human Biological Structure

(minimum 9 hours)

ANTH/CRMJ 4210 Human Osteology
 LIFE 3050 Genetics
 LIFE 3600 Cell Biology
 CHEM 2300 Introduction to
 Organic Chemistry **or**
 CHEM 2320 or 2420 Organic Chemistry I **or**
 CHEM 2340 or 2440, Organic Chemistry II
 CHEM/MOLB 3610 Principles of
 Biochemistry
 MOLB 2240 Medical Microbiology
 MOLB 3000 Intro to Molecular Biology
 MOLB 4600 General Biochemistry I **or**
 MOLB 4610 General Biochemistry II
 ZOO/KIN 2040/2041 Human Anatomy
 ZOO/KIN 3115 Human Systems Physiology

Physics

(minimum 8 hours)

PHYS 1110 Physics I **and**

PHYS 1120 Physics II

or

PHYS 1310 College Physics I **and**

PHYS 1320 College Physics II

Pre-Law Concentration

The Department of Criminal Justice offers a Pre-law Concentration for Criminal Justice majors that consists of courses selected from several departments across the university. These courses were chosen to help prepare students for the challenges of law school and the practice of law. Students electing the Pre-Law Concentration are urged to seek advising early.

Along with the 33 hours of criminal justice degree requirements, an additional 27 credit hours (18 of which must be 3000-level courses or above) must be earned for the Pre-Law Concentration.

Written Comprehension and Expression

(Choose at least two courses-min. 6 hours)

CRMJ 3680 Research Methods

in Criminal Justice*

ENGL 4000 21st Century Issues

in Professional Writing

ENGL 4010 Technical Writing

in the Professions

ENGL 4020 Editing for Publication

ENGL 4780 History of the English Language

ENGL 4970 Writing Internship

*Course will be allowed to count for the concentration hours requirement.

Verbal Comprehension and Expression

(Choose at least one course - min. 3 hours)

COJO 2090 Persuasion

COJO 2260 Interviewing

COJO 3010 Business and Professional

Communication

COJO 3160 Theory of Language and Society

COJO 4061 Rhetorical Theory and Criticism

COJO 4050 Communication and Conflict

Critical Understanding of Human Institutions and Values

(Choose at least one course - min. 3 hours)

ECON 1020 Principles of Microeconomics

PHIL 2200 Social and Political Philosophy

PHIL 3300 Ethical Theory

PHIL 3350 History of Moral Philosophy

PHIL 3500 History of Science

PHIL/ENGL 3340 Philosophy of

Literature (max. 3 hours)

POLS 2460 Introduction to Political Philosophy

Creative and Analytical Thinking*(Choose at least one course - min. 3 hours)*

ENGL 2050 Creative Writing -

Intro to Fiction or

ENGL 2060 Creative Writing - Intro to

Non-Fiction (max. 3 hours) or

ENGL 2070 Creative Autobiographical

Writing (max. 3 hours) or

ENGL 2080 Creative Writing - Intro

to Poetry (max. 3 hours)

PHIL 2420 Critical Thinking

PHIL 3140 Philosophy of Science

PHIL 3150 Philosophy of Social Science

PHIL 3420 Symbolic Logic

PHIL 3510 Introduction to Epistemology

World Cultures and International Institutions*(Choose at least one course - min. 3 hours)*

HIST 1320 World Civilizations to 1450

HIST 1330 World Civilizations from 1450

INST/BUSN 2000 Introduction to

International Business

POLS/INST 2310 Introduction to

International Relations

POLS/INST 4340 International Organizations

ANTH 3420 Anthropology of Global Issues

POLS/INST/SOC 4300 The World System

INST/SOC 4370 Global Political Economy

ECON/INST 4710 Comparative Systems

Electives*(Select courses from this list - maximum 3 courses or 9 hours)*

AMST 1030 Social Justice in the 21st Century

ANTH 1200 Introduction to

Cultural Anthropology

ANTH/INST 4350 Culture Change

CNSL 2200 Intro to Student Leadership

CNSL 4520 Fundamentals of Counseling

COJO 1030 Interpersonal Communication

COJO 1040 Introduction to Human

Communication

COJO 3190 Cross-Cultural Communication

COJO 4150 Legal Communication

ECON 1000 Global Economic Issues

LANG/ENGL 4750 Fundamentals of Linguistics

LANG/ENGL 4770 Sociolinguistics

PHIL 3440 Philosophy of the Mind

POLS 4090 Anglo-American Jurisprudence

POLS/INST 1200 Non-Western

Political Cultures

STAT 2000 Statistics and the World or

STAT 2050 Fundamentals of Statistics or

STAT 2070 Introductory Statistics

for the Social Sciences

Undergraduate Minor

A minor in criminal justice requires 9 hours of foundation classes and 9 hours of required core courses. Students majoring in political science, psychology or sociology must complete 12 hours of criminal justice courses outside of their major department. A grade of C or better is required in all core and elective courses.

Criminal Justice (CRMJ)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1001 [2120] [ADJU 2120]. Introduction to Criminal Justice. 3. Introduces American criminal justice system. Examines nature of crime and describes historical and philosophical foundations of law enforcement agencies, criminal courts and correctional institutions. Discusses major issues facing the criminal justice system. (Normally offered fall semester)

1005. Issues in Criminal Justice. 1. [(none)↔I, L] Introduces students to Criminal Justice through a study of a contemporary issue or problem from the perspectives of the various subfields. *Prerequisite:* criminal justice major.

2210 [ADJU 2210]. Criminal Law. 3. Introduces the fundamental principles of substantive criminal law: the history and philosophy of modern criminal law, the basic dimension of criminality, the elements of major crimes, criminal defenses and the nature of criminal sanctions. *Prerequisite:* CRMJ 1001. (Normally offered spring semester)

2400 [ADJU 2400]. Criminology. 3. Generally introduces the nature of crime, statistics on crime, types of criminal behavior and explanations of crime. Cross listed with SOC 2400. *Prerequisite:* SOC 1000 or equivalent. (Normally offered once a year)

3100 [ADJU 3100]. Politics and the Judicial Process. 3. Analyzes courts and their personnel in the American political system, including examination of functions of courts, characteristics of judicial process, approaches to the study of judicial behavior, and role of courts as policy makers. Cross listed with POLS 3100. *Prerequisite:* POLS 1000. (Normally offered spring semester)

3110. Criminal Courts and Processes. 3. Examines the structure, organization and operation of criminal courts and their role in the larger criminal justice system; the process of adjudication of criminal cases from initial charging through post-conviction review; the constitutional rights of the accused; and the roles of the major courtroom participants. *Prerequisites:* CRMJ 1001; 2210; 2400.

3150. Crime Causation. 3. Examines the causal mechanisms that produce crime. Theoretical perspectives and empirical research from various disciplines will be evaluated, with particular emphasis placed on social factors that may cause crime. Policy implications of the different perspectives will be discussed. *Prerequisites:* CRMJ/SOC 2400 and junior standing.

3200 [ADJU 3200]. Ethics in Administration of Justice. 3. [C1↔(none)] Introduces basic ethical theories, emphasizing how ethical theory can be applied to contemporary problems in law enforcement, corrections and adjudication. Students will be called upon to apply these various

ethical frameworks to typical moral dilemmas in criminal justice. *Prerequisites:* CRMJ 1000; 2210, 2400..

3250 [ADJU 3250]. Juvenile Delinquency. 3. Considers the nature of delinquency, including an analysis of treatment methods and the juvenile justice system. *Prerequisites:* SOC 1000 or PSYC 1000 and 2300. (Normally offered spring semester)

3320. Family Violence. 3. [C2↔(none)] Prevalence, types and causes of family violence are examined with an emphasis on a sociological understanding. Theories of violence are applied to the conflict that exists within the family institution such as woman battering, courtship conflict and child abuse. Cross listed with SOC 3320. *Prerequisite:* 6 hours of sociology or equivalent social science (including SOC 1000). (Normally offered summer or fall semester)

3350 [ADJU 3350]. Introduction to Corrections. 3. Encompasses contemporary practice in area of corrections, including study of police, courts and correctional institutions. *Prerequisite:* CRMJ 1001. (Normally offered fall semester)

3400 [ADJU 3400]. Deviant Behavior. 3. [C2↔(none)] Examines theory and research relevant to understanding deviant behavior in general and specific types of individual and sub-cultural deviancy. Cross listed with SOC 3400. *Prerequisite:* SOC 1000 or equivalent.

3500. Drugs and the Criminal Justice System. 3. Focus on drugs and their impact on society. Particular interest is paid to the extent of drug use/abuse in America, and the effects of this problem on the criminal justice system and society as a whole. Strategies for controlling both supply and demand are discussed. *Prerequisites:* CRMJ 1000 and 2400.

3490 [ADJU 3490]. Policing. 3. Modern Modern American police agencies strike a difficult balance between the rule of law and the protection of the rights of the citizenry. As such, policing is an ever-evolving social phenomenon. Explores the complex relationship between police agencies and the people that they serve. *Prerequisites:* CRMJ 1001 and 2210.

3680 [ADJU 3680]. Research Methods in Criminal Justice. 4. [M3↔WC, L] Introduces students to fundamental issues associated with application of scientific methods to criminal justice problems. Students will develop research designs involving ethnographic, archival, historical, and quantitative methods then conduct individual research projects. Special attention is given to CJ data sources and techniques for analyzing data using computer spreadsheets. *Prerequisites:* STAT 2050, 2070, or equivalent; enrollment limited to criminal justice majors.

4110 [ADJU 4110]. Constitutional Rights and Liberties I: The Bill of Rights. 3. Encompasses case-study analysis of legal and political consequences of recent judicial decisions in such areas as freedom of speech, press, association, religion and criminal procedure. Cross listed with POLS 4110. *Prerequisite:* 9 hours of political science including POLS 4100. (Normally offered once a year)

4120 [ADJU 4120]. Constitutional Rights and Liberties II: The Thirteenth, Fourteenth, and Fifteenth Amendments. 3. Encompasses case-study analysis of legal and political consequences of recent judicial decisions in such areas as race relations, the right to vote, legislative apportionment and the Constitution in time of war. Cross listed with POLS 4120. *Prerequisite:* 9 hours of political science including POLS 4100.

4130 [ADJU 4130]. Leadership and Management in the Criminal Justice System. 3. There is a clear need for managers and administrators to understand leadership and ethics. This course is designed to provide students with a foundation in the management and leadership discourse surrounding criminal justice agencies. *Prerequisites:* CRMJ 2120 and 3350 or 3490. (Normally offered fall semester)

4140 [ADJU 4140]. Criminal Legal Procedure. 3. The issues and processes relevant to safeguarding personal liberties during the investigatory stage of criminal procedure through the study of appellate court cases announcing the constitutional principles governing warrants; arrest; search and seizure; interrogation and confessions; pretrial identification procedures; the exclusionary rule. *Prerequisites:* CRMJ 1001; 2210; 2400.

4150. Community-Based Corrections 3. Designed to provide students with an in-depth look at the community corrections complex. It will examine the history and growth of community corrections, the probation system, methods of post-incarceration supervision, intermediate sanctions, and correctional programming and treatment in the community. *Prerequisite:* CRMJ 3350.

4230. Forensic Anthropology. 3. Introduces methods and purposes of physical anthropology as applied in human identification for law enforcement agencies. Cross listed with ANTH 4230. Dual listed with CRMJ 5230. *Prerequisite:* ANTH 1100. (Normally offered fall semester of odd-numbered years)

4250 [ADJU 4250]. Sociology of Law. 3. [W3, C2♦(none)] A consideration of sociological concepts such as inequality, stratification, social control and social change in an analysis of the law and legal institutions. Topics include: the role of the police, lawyers, judges, and juries; race, sex, age, and sexuality discrimination and civil rights; free speech, and toxic torts. Cross listed with SOC 4250. *Prerequisites:* SOC 1000 and upper division status. (Offered based on sufficient demand and resources)

4260. Gangs. 3. Considers the nature and the characteristics of gangs and gang members. The theoretical and empirical evidence regarding the phenomenon of gangs is evaluated. Particular emphasis is placed on the social and polity implications of this social problem. *Prerequisites:* CRMJ/SOC 2400 or CRMJ 3250 and upper division standing in criminal justice.

4270 [ADJU 4270]. Discrimination and the Law. 3 (Max. 6). A sociological examination of specific examples of discrimination and justice within the law and the legal system. Topics routinely vary and may include race, gender, religion, cultures or sexuality. Class may be repeated for credit when topics differ. Cross listed with SOC 4270. *Prerequisites:* SOC 1000 and junior status.

4280 [ADJU 4280]. Comparative Criminal Justice. 3. [W3, C2, G1♦WC, G] Compares the incidence, trends, control, treatment and prevention of crime across nations using mainstream criminological theories. Examines criminal justice systems from an international perspective and draws lessons for the American society. Explores forms of international cooperation and difficulties in the control of transnational crimes. *Prerequisite:* CRMJ 2120 or CRMJ 2400 or SOC 1000 or SOC 3400.

4370 [ADJU 4370]. Criminal Psychopathology. 3. Provides an overview of current theories and empirical evidence concerning relationship between psychological disorder and criminal behavior. Examines various clinical syndromes and their role in biological, social and psychological genesis of crime, as well as the concept of criminal responsibility. Cross listed with PSYC 4370. *Prerequisite:* 6 hours in psychology. (Normally offered spring semester)

4540. Women, Crime and the Law. 3. [W3, C2♦(none)] Addresses status of women as offenders and as victims in society and in the criminal justice system. Considers special role of women as professionals in the criminal justice system. Cross listed with SOC/WMST 4540. *Prerequisite:* WMST/SOC 1080, 3500 or SOC 2400.

4600 [ADJU 4600]. Political Violence. 3. Examines causes and consequences of violence. One-third is devoted to causes including animal violence, human nature and social norms. Remainder examines causes and consequences of violence in particular context. Description of each course project can be found in the syllabus. Final project is an extensive review of the Holocaust. Students are asked to analyze this act of mass murder, then argue whether conditions that produced the Holocaust are present in Western society. Cross listed with POLS 4600. *Prerequisites:* POLS 1000 and SOC 1000. (Normally offered every other year)

4700. Global Terrorism. 3. Examines the concept, causes, incidence, types, consequences of, and responses to terrorism. Highlights the distinction between domestic and international terrorism and expands on the latter within the framework of the global environment. *Prerequisites:* CRMJ 1000, 2400 and 2210.

4710 [ADJU 4710]. Police Deviance. 3. A general description of police officials' activities which are inconsistent with the officers' official authority, organizational authority, values, and standards of ethical conduct (which are usually implied, rather than stated). Deviance can encompass a plethora of behaviors for which an officer can be disciplined. *Prerequisites:* POLS 1000 and CRMJ 2120.

4720 [ADJU 4720]. Criminal Justice Civil Liability. 3. Exposes students to civil liability generally and to the federal laws specifically; makes student aware of the liability risks of criminal justice personnel; and indicates proactive steps that can be taken to minimize the liability risks to criminal justice practitioners and agencies. *Prerequisite:* 9 hours of criminal justice courses.

4730. Psychology and Law. 3. Exposes students to the application of psychological principles to problems in law. Emphasizes the American trial system, correction systems and civil commitment. Cross listed with PSYC 4730. *Prerequisite:* 12 hours in psychology. (Offered alternate years)

4750 [ADJU 4750]. Internship in Criminal Justice. 1-6 (Max. 6). Integrates practical criminal justice experience with academic knowledge. Students are expected to participate in specifically assigned duties and observe broader activities of the sponsoring organization; then, reflect upon this participation and observation in the form of written assignments. *Prerequisite:* consent of instructor.

4760. Seminar: Research in Child Abuse and Neglect. 3. [C2♦(none)] Lecture and seminar course. Examines the phenomenon of child abuse and neglect. Includes an overview of attitudes towards and legal definitions of child maltreatment. Explores parental factors, contextual influences and developmental consequences of maltreatment. Relies heavily on current research in child abuse and neglect. Emphasizes policy implications. Cross listed with PSYC 4760. *Prerequisite:* 6 hours in psychology. (Offered alternate years)

4810. History of Organized Crime in the United States. 3. Explores how the concept of organized crime has changed over time, with special emphasis on the 20th century. Special emphasis is given to questions of ethnicity, crime fighting, and the media. Draws on readings, film analysis, and class discussions. *Prerequisite:* HIST 1221.

4860. Social Inequality, Crime, Criminal Justice and the Law. 3. Provides an in-depth look at social inequality and its impact on crime, criminal justice, and the law. Particular emphasis will be given to the individual and interactive effects of race, class, and gender inequality. Critical theoretical perspectives that promote social justice will be the primary analytical focus. *Prerequisite:* 9 hours of CRMJ related coursework.

4890. Serial Killers. 3. Introduces students to particular case studies of notorious serial killers and explores current methods of tracking and apprehending such individuals. Draws on readings, films, and lectures. *Prerequisites:* junior standing and 6 completed hours of upper division criminal justice courses.

4965. Research Hours in Criminal Justice. 1-6 (Max. 6). Provides undergraduates with an opportunity to assist in conducting various aspects of research under the supervision of criminal justice faculty. Specific research activities and requirements will be determined in consultation with the sponsoring faculty person. Credit is only available for research corresponding to enrollment in this course. Dual listed with CRMJ 5965. *Prerequisites:* upper division standing and consent of instructor required in advance.

4970 [ADJU 4970]. Criminal Justice Practicum. 9-12 (Max. 12). Integrates academic knowledge with applied administration of justice experience through supervised field placement. Students are required to complete reading, discussion and writing assignments in addition to their practicum responsibilities. *Prerequisites:* junior standing and consent of practicum coordinator.

4975 [ADJU 4975]. Readings. 1-3 (Max. 6). Special programs of readings in criminal justice related subjects will be outlined to meet needs of individual students. *Prerequisite:* consent of instructor.

4990 [ADJU 4990]. Topics: _____. 1-3 (Max. 6). Intended to accommodate various special subjects not offered as regular courses. *Prerequisites:* as listed for housing department's topics course.

Earth System Science Program

6072 Engineering Building, 755-4955

FAX: (307) 766-2635

Web site: www.uwyo.edu/ESS

Director: Robert D. Kelly

Earth System Science (ESS) is an interdisciplinary, science-oriented, undergraduate program focusing on the interactions between the various components composing the Earth system: the biosphere, geosphere, lithosphere, hydrosphere, atmosphere, and anthrosphere. Students earning a BS degree in ESS are required to declare a Concentration in one of the participating programs, which include Anthropology, Atmospheric Science, Biology, Botany, Geography, Geology and Geophysics, Secondary Education, and Soil Science. This list will expand as the program grows. ESS is administered under a committee of Deans, and the program Departments reside in the Colleges of Agriculture, Arts and Sciences, Education, and Engineering. The program is currently administered in Atmospheric Science. See page 314 for more information.

English

201 Hoyt Hall, 766-6452

FAX: (307) 766-3189

Web site: www.uwyo.edu/english

Department Chair: Peter Parolin

Assistant Department Chair: Sandra Clark

Professors:

SUSAN ARONSTEIN, B.A. Seattle Pacific University 1980; M.Sc. Edinburgh University 1984; Ph.D. Stanford University 1987; Professor of English 2006, 1987.

SUSAN C. FRYE, B.S. Smith College 1974; M.A. University of New Mexico 1981; Ph.D. Stanford University 1986; Professor of English 2001, 1986.

ALYSON HAGY, B.A. Williams College 1982; M.F.A. University of Michigan 1985; Professor of English 2008, 1996.

HARVEY HIX, B.A. Belmont College 1982; M.A. University of Texas, Austin 1985; Ph.D. 1987; Professor of English 2005.

CAROLINE McCracken-Flesher, M.A. University of Edinburgh 1980; M.A. Brown University 1986; Ph.D. 1989; Professor of English 2004, 1995, 1989.

CEDRIC D. REVERAND, II, B.A. Yale University 1963; M.A. Columbia University 1964; Ph.D. Cornell University 1972; Professor of English 1982, 1971.

DAVID ROMTVEDT, B.A. Reed College 1972; M.F.A. University of Iowa 1975; Associate Professor of English 2008, 1995.

ROBERT TORRY, B.A. Hiram College 1972; Ph.D. State University of New York-Buffalo 1988; Professor of English 2009, 1983.

Associate Professors:

CAROLYN ANDERSON, B.A. Auckland University 1981; M.A. 1984; Ph.D. Stanford University 1992; Associate Professor of English 2001, 1993.

DUNCAN S. HARRIS, A.B. Stanford University 1965; M.A. Boston University 1966; Ph.D. Brandeis University 1973; Associate Professor of English 1977, 1970.

JEANNE E. HOLLAND, B.A. Auburn University 1978; M.A. 1981; Ph.D. State University of New York-Buffalo 1989; Associate Professor of English 1995, 1989.

BETH LOFFREDA, B.A. University of Virginia; M.A. Rutgers University; Ph.D. 1997; Associate Professor of English 2004, 1998.

MICHAEL KNIEVEL, B.A. Creighton University 1995; M.A. Creighton University 1997; Ph.D. Texas Tech University 2002; Associate Professor of English 2009, 2002.

CLIFFORD J. MARKS, A.B. University of Michigan-Ann Arbor 1983; M.A. State University of New York-Buffalo 1988; Ph.D. 1992; Associate Professor of English 2000, 1993.

KATE NORTHROP, B.A. University of Pennsylvania 1991; MFA University of Iowa 1995; Associate Professor of English 2009.

ERIC W. NYE, B.A. St. Olaf College 1974; M.A. University of Chicago 1976; Ph.D. 1983; Associate Professor of English 1989, 1983.

PETER PAROLIN, B.A. University of British Columbia 1988; M.A. University of Pennsylvania 1991; Ph.D. 1997; Associate Professor of English 2003, 1997.

MARY SHERIDAN-RABIDEAU, B.A. University of Notre Dame; M.A. University of Illinois, Chicago 1994; Ph.D. University of Illinois, Urbana-Champaign 2000; Associate Professor of English 2007.

Assistant Professors:

CRAIG A. ARNOLD, B.A. Yale University 1990; Ph.D. University of Utah 2001; Assistant Professor of English 2004.

NICOLE QUAKENBUSH, B.A. Kalamazoo College 1996; MFA University of Arizona 2000; Ph.D. 2008; Assistant Professor of English 2009.

CASKEY RUSSELL, B.A. Western Washington University 1993; M.A. 1993; Ph.D. University of Oregon 2001; Assistant Professor of English 2004.

JASON THOMPSON, B.A. Pacific Lutheran University 1996; MFA University of Arizona 2000; Ph.D. 2008; Assistant Professor of English 2009.

BRAD WATSON, B.A. Mississippi State University 1978; MFA University of Alabama 1985. Assistant Professor of English 2005.

Senior Lecturers:

SANDRA L. CLARK, B.A. University of Wyoming 1988; M.A. 1990; Senior Lecturer in English 2003, 1997.

MARGARET G. GARNER, B.A. University of Wyoming 1969; M.A. University of Utah 1972; Senior Lecturer in English 2005, 1998, 1986.

COLIN K. KEENEY, B.A. University of Wyoming 1982; M.A. 1988; Senior Lecturer in English 2003, 1997.

BRUCE A. RICHARDSON, B.A. University of California at Los Angeles 1972; M.A. 1978; Ph.D. 1983; Senior Lecturer in English 2004, 1993, 1984.

CHRISTINE STEBBINS, B.A. University of Wyoming 1992; M.A. 1993; Senior Lecturer in English 2008, 2000.

Associate Lecturer:

JULIANNE COUCH, B.S., B.F.A. Emporia State University 1982; M.A. 1984; Associate Lecturer in English 2008.

Assistant Lecturers:

PAUL BERGSTRAESSER, B.A. Oberlin College 1989; M.A. Northern Michigan University 2000; Ph.D. University of Illinois, Chicago 2007; Assistant Lecturer in English 2007.

APRIL HEANEY, B.A. University of Wyoming 1998; M.A. 2000. Assistant Lecturer in English 2005.

SHELLY NORRIS, B.A. University of Wyoming 1992; M.F.A. University of Alaska, Fairbanks 1995; Assistant Lecturer in English 2007.

JOYCE STEWART, B.A. Felician College 1994; M.A. Creighton University 1998; Assistant Lecturer in English 2009.

MARGARET VAN BAALEN-WOOD, B.A. University of Wyoming 1983; M.A. 2003. Assistant Lecturer in English 2004.

Study in the English department today embraces literature, creative and expository writing, and the nature and workings of language. Students in the department's programs can learn to read with pleasure and understanding, to write with grace, clarity and force, and to think with greater penetration and breadth. With these accomplishments, students are prepared for lives and work in which their power to understand, read, write and communicate will serve themselves and others, some specifically in careers in writing or teaching, some in professions of law, medicine, administration or almost any other field.

English studies center on the reading of what people have said, sung or written about their lives, their desires and the whole experience of being human. Literature is a great inheritance, a tradition that reaches back through the centuries, but it is also continually growing and changing. New theories about literature, and new and rediscovered literature itself, renew the ancient functions of literature to reflect, support and enhance the lives of the men and women who read it.

Undergraduate Major

Requirements	Hrs.
Lower-division surveys of literature in English 2425, 2430, 2435	9
Shakespeare or Renaissance Literature 4110, 4120, or 4170	3
4000-level courses in literature before 1900, in two different periods—4140, 4160, 4180, 4190, 4200, 4210, 4220, 4240, 4250, 4260, 4310, 4320, 4360, 4830 (exclusive of the Shakespeare/Renaissance requirement)	6
Emerging fields and approaches	3
3610, 3710, 4450, 4460, 4470, 4640, 5360, or 5870	
Senior Seminar (4990).....	3
Electives (at least 6 hours must be at the 4000- or 5000-level).....	12
Total hours	36

(Courses in professional writing count as electives)

Concentration in Literary Studies: Students wishing to concentrate in literary studies, including students interested in pursuing graduate degrees in English, should attempt to take the following upper-division courses: a course in Chaucer or in Medieval literature; a Shakespeare course; another course in English literature before 1800 (exclusive of Chaucer and Shakespeare); a course in 19th-Century English literature; two courses in American literature; a course in literature after 1900; the Senior Seminar; a course in Emerging fields and approaches.

In addition, English majors must complete 12 semester hours of a single foreign language or demonstrate an equivalent competency. American Sign Language will not meet this requirement.

Within the framework above, each student should construct, with the help and approval of the adviser, a balanced and coherent program.

Only those courses in which a grade of C or better has been earned may count toward the 36 hours required for the B.A. (the B.S. is not offered) and the foreign language requirement.

Advanced Standing

Advanced standing in English is required for all majors prior to taking the senior seminar (ENGL 4990). To be eligible for advanced standing in English, the student must have completed 24 hours of English course work above Writing A, including the 3 required survey courses (2425, 2430, 2435). Each course must have been passed with a grade of C or better. Approved transfer courses from other institutions will satisfy the prerequisites for advanced standing. English 4990 should be taken in the next to the last semester before graduation.

English Honors Program

Requires a 3.5 GPA and a senior honors paper and defense. See the English department for information.

Graduate Program

The English department offers programs of study leading to the Master of Arts degree. For details of the graduate program see the *Graduate Bulletin*, contact the English department, or check the department web site.

Minor in Literary Studies

To minor in literary studies, a student must complete the following sequence of courses:

Requirements	Hrs.
2000/3000-level surveys	9
(2425, 2430, 2435, 3150, 3180, or 3380)	
4000-level literature courses	9

Alternatively, a student, in close consultation with an English department adviser, may construct his or her own program. Only those courses in which a grade of C or better has been earned may count toward the Literary Studies minor. For more information, please come to the English Department office, 201 Hoyt Hall.

Minors in Writing

The writing minors are designed to be used with any major. English majors may choose to have a minor in creative or professional writing, but at least 12 credit hours in the minor must be from courses not counted toward the student's major. All courses counted toward the writing minors must be completed with grades of C or better. Students in either minor must consult with an adviser from the minor in designing their programs.

Minor in Creative Writing The creative writing minor consists of six courses (18 hours) in creative writing or related courses. Three of these courses will be in creative writing (9 hours), one of which must be at the 4000 level; two of these courses will be literature courses (6 hours), one of which must be at the 4000 level; and a cognate course (3 hours). The cognate course is taken in another department which complements a student's particular interest in writing. This cognate course *must be approved in advance* by the director of creative writing. English majors may not take an English course as their cognate.

Minor in Professional Writing This minor is designed for students in any major who are considering careers in professional or technical writing (including teaching, publishing or editing, web authoring, public relations, and journalism) as well as for students who simply seek writing expertise beyond the General Education requirements. The minor will offer in-depth instruction in writing that will prepare them for the numerous careers in which effective written communication is highly valued.

To complete the 18 credits required for the minor, students take the foundations courses (ENGL 2035 and 4000), at least two upper-division professional writing courses (ENGL 4010, 4020, 4030, and/or 4050), and up to two additional elective courses approved by their adviser (0-6 credits).

Concentrations

The department is developing concentrations in particular areas. Contact the main office and/or web site for current information.

Teacher Certification

Students seeking the B.A. in English may also be certified for public school teaching by completing additional requirements set forth by the College of Education.

Prerequisites

Most 2000-level courses require the completion of the WA requirement. Normally, 3000-4000-level courses have the prerequisites of 6 hours of 2000-level literature courses. Students without certain prerequisites should consult the English Department for permission to enroll.

English (ENGL)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

0220. Written Skills for Non-Native Speakers. 0. Provides instruction for those non-native speakers of English who do not demonstrate the competency in writing to enter ENGL 1210. Offered for S/U only.

1008. Introduction to Academic Writing. 3. Prepares students for English 1010, the required first-year writing course. Emphasizes aspects of writing essential to effective communication, including paragraph and essay organization, the use of support and detail, sentence and clause structure, diction and mechanics. Offered for S/U only.

1009. IC In Pop Culture. 1. [F1, W1↔(none)] Complements WA writing activities, provides opportunities for students to do thematic readings, expand their understanding of diversity issues, learn about the intellectual expectations of college life, and become acquainted with the rich resources of the UW campus. Linked with WA course. *Prerequisite:* concurrent enrollment in ENGL 1010.

1010. College Composition and Rhetoric 3. [W1↔WA] A composition course emphasizing expository writing and close, analytical reading. A grade of C or better is required to meet the WA requirement. Students may not have credit in both ENGL 1010 and 1000, 1110 or 1210. (Offered fall, spring and summer)

1030. Intellectual Community in Cinema Etc. 3. [(none)↔I] Introduces students to a range of issues within the humanities through the analysis of film, television, and theater. Taught respectively by Modern and Classical Languages and English. Cross listed with LANG 1030.

1050. Literature and Film from 1940 to the Present. 3. [C1↔(none)] A study of contemporary texts and films from various cultures, introducing the variety and vigor of recent world literature. Does not count toward the English major.

1080. Introduction to Women's Studies. 3. [C1↔CH, D] An introduction to key issues in women's studies. A topical examination of women's participation in and relationship to institutions of society, such as family and school, as well as processes and activities, such as work, art and politics in historical and cross-cultural analysis. Cross listed with WMST 1080.

1210. English Composition for International Students. 3. [W1↔WA] Provides non-native speakers of English with instruction in English Composition that specifically addresses their language acquisition needs and is the equivalent of ENGL 1010. Students may not have credit in ENGL 1210 and 1000, 1010, or 1110.

2005. Writing in Technology and the Sciences. 3. [W2↔WB] Develops writing styles and techniques, document design and formats, and audience/readership considerations that are specifically suited to technological and scientific fields of study. The course concludes with a student-directed long form report. *Prerequisite:* successful completion of WA.

2020. Introduction to Literature. 3. [W2, C1↔CH, WB] An introduction to literary study including poetry, fiction and drama. *Prerequisites:* WA; sophomore standing.

2030. Critical Reading and Writing. 3. [W2↔WB] Provides practice and guidance in writing expository essays. *Prerequisites:* WA; sophomore standing.

2035. Writing for Public Forums. 3. [W2, C2↔WB] Introduction to professional writing that focuses on analyzing and producing texts designed to influence public opinion. Genres may include letters, editorials, web pages, pamphlets, e-mail, speeches and position papers. Focuses on skills in collaboration and use of technology necessary for ethical, effective participation in public discourse. *Prerequisite:* WA.

2050. Creative Writing-Introduction to Fiction. 3 (Max. 6). Analyzes forms of fiction and the practice of creative writing at an introductory level. *Prerequisite:* WA.

2060. Creative Writing-Introduction to Nonfiction. 3 (Max. 6). The new nonfiction course will be described according to the emphasis the individual professor chooses to impart. In general, the course will teach students to research, organize, and express themselves in a nonfiction genre, such as essay, memoir, article, biography, autobiography, etc. *Prerequisite:* WA.

2070. Creative Autobiographical Writing. 3. [W2↔(none)] Students read and explore in writing five autobiographical forms: brief bio for publicity and job application purposes, memoir, personal essay, confession and fictional monologue. What you can reveal about yourself, when and how and for whom. *Prerequisite:* completion of WA.

2080. Creative Writing-Introduction to Poetry. 3 (Max 6). Analyzes forms of poetry and practice of creative writing at introductory level. *Prerequisite:* WA.

2110. English Oral Skills. 3. Instruction for Novice to advanced Low speakers in refining English pronunciation, stress and intonation, listening comprehension, oral grammar practice and building vocabulary. Offered for S/U only. *Prerequisite:* instructor consent.

2130. Creative Impulse: Literature and the Fine Arts. 3. [C3↔(none)] Centers on literature with analogous examples drawn from painting, sculpture, architecture and music. Focuses on the variety of ways in which people perceive, evaluate and interpret reality.

2170. The Bible as Literature. 3. [C1, G1↔(none)] A study of the Bible as a body of literary expression with an introduction to critical technique appropriate to such study. *Prerequisite:* WA.

2190. African Literature. 3. [C1, G1↔(none)] A study of the modern literature of Africa written in English, against its background of the continent's oral traditions. *Prerequisite:* WA.

2240. Arthurian Legend. 3. [C1, W2↔(none)] An introduction to both Arthurian romance and writing about literature. Traces the Arthurian Legend from its roots in Welsh mythology through its development in the Middle Ages and to its current manifestations in popular culture. *Prerequisites:* WA; sophomore standing.

2340. Native American Culture and Literature. 3. [(none)↔CH, D] Broad cultural study of Native Americans, past and present. Emphasizes folklore and literature. Cross listed with AIST 2340. *Prerequisite:* WA.

2345. American Indians in Hollywood Film. 3. [(none)↔CH, D] Examines the ways Hollywood film has constructed various forms of racial identity for American Indians. Cross listed with AIST 2345. *Prerequisite:* WA.

2350. African American Literature. 3. [(none)↔WB, D] Encompasses poetry, fiction, drama and autobiography from the Harlem Renaissance and earlier to present. Cross listed with AAST 2350. *Prerequisite:* WA.

2360. Mexican American Literature. 3. [C1, G1↔CH, D] Discusses literary reflections of Chicanoism. Studies literature of the Hispanic Southwest, Mexican-American folklore and the contemporary Chicano movement. Cross listed with CHST 2360. *Prerequisite:* WA.

2400. Introduction to Folklore. 3. An introduction to forms of folklore and their relation to cultural settings. Focuses on myths, folktales, legends, ballads, proverbs, riddles, etc. from various cultures. *Prerequisite:* WA.

2410. Literary Genres. 3 (Max. 6). [(none)◀CH, WB] Studies specific genres of literature. Emphasis will vary (poetry, fiction, drama, etc.) from semester to semester, depending on curricular needs. *Prerequisite:* WA.

2425. Literatures in English I. 3. [(none)◀CH] Surveys major figures and literary movements in literatures written in English through 1750. *Prerequisite:* WA.

2430. Literatures in English II. 3. [(none)◀CH] Surveys major figures and literary movements in literatures written in English 1750-1865. *Prerequisite:* WA.

2435. Literatures in English III. 3. [(none)◀CH] Surveys major figures and literary movements in literatures written in English 1865-present. *Prerequisite:* WA.

2490. Studies in_____ 1-6 (Max. 6). Presents a variety of topics in literature. *Prerequisite:* WA.

3050. Designing in Digital Spaces. 3. [(none)◀L] Students build expertise in content generation and design for web documents. Through collaborative and individual research-based projects. Work on developing web sites that will be of immediate practical use to a specific group of people (i.e., niche users). Think about effective writing means in a digital environment and for a particular audience. Develop skills with advanced web and print research, basic HTML programming language, and standard web design software (primarily Dreamweaver). *Prerequisites:* WA and achieved junior standing.

3150. World Literature 3. (Max. 6). [(none)◀CH, G] Encompasses reading and analysis of major works representative of significant periods or literary forms in the history of literature. *Prerequisites:* WA and WB.

3180. Medieval Culture. 3. [C1, G1◀(none)] Surveys the major texts of medieval European literature (in translation) in their cultural and historical contexts. Genres covered include epic, saga, romance, dream vision, drama and fabliaux. *Prerequisite:* WA.

3340. Philosophy in Literature. 3 (Max 6). [C1◀(none)] Examines central themes in literary works with philosophical significance; studies related general issues. Authors studied may include Aristotle, Dostoevski, Kafka, ee cummings, Grass, Mann, Pound, Rilke, Camus, and Sartre. Issues include questions of interpretation, criticism, and translation, as well as the possibility of direct philosophical influence on authors. Cross listed with PHIL 3340. *Prerequisites:* one course in philosophy and one course in literature or criticism in the English department.

3380. Great Works of American Literature. 3. [C1◀(none)] Traces the development and staying power of the American tradition by studying literary monuments such as Melville,

Whitman, Dickinson, Eliot, and Faulkner. Credit cannot be earned in both 2380 and 3380. *Prerequisite:* WA.

3610. Non-Western Women Writers. 3. [C1, G1◀(none)] Examines literature written by women in non-western cultures. The geographical region, time period, and genres of literature may vary by semester. Analyzes representations of such topics as family, marriage, sexuality, community, and colonialism as expressed in fiction, drama, literary non-fiction, and/or poetry. *Prerequisites:* ENGL 1010 or WMST 1080; junior standing.

3710. Gender: Humanities Focus. 3. [C1◀CH] Explores how men and women are imaged differently, studying the influence of representation on gender (including representations in literature, film, art, popular culture, and/or performance). Sharpens students' ability to analyze texts and images and investigate those texts' messages about gender, sexuality, ethnicity and class. Cross listed with ART/WMST/HIST 3710. *Prerequisite:* WMST 1080 or ENGL 1010.

4000 [3000]. 21st Century Issues in Professional Writing. 3. [(none)◀WC] Examines ethical, cultural, and practical issues for writers in complex, real-world scenarios that pose communication challenges. Focuses on applying fundamental principles of rhetoric, effective research methods, analytical skills, and design technologies to collaborative and individual problem-based projects. *Prerequisites:* WA and WB.

4010. Technical Writing in the Professions. 3. [W3◀WC] Deals with professional writing for various audiences. Includes research methods, audience analysis, organization and developmental techniques, abstracting, types of reports and popularization. Part of the last half of the course is devoted to solution of a student-initiated problem, culminating in the writing of a long-form report. *Prerequisites:* WA and WB; junior standing.

4020. Editing for Publication. 3. Theory and practice of editing in the contexts of book, magazine, newspaper, and web-based publications. Standard editing practices for using grammar, proofreading marks, and computer editing tools. *Prerequisites:* WA, WB (ENGL 2035 and 3000 recommended)

4050. Writer's Workshop in_____ 1-3 (Max. 6 at undergraduate level, Max. 12 for B.A. plus M.A.). Students submit manuscripts in the short story, poetry, drama, etc. Includes class and conference criticism and consultation. Considers different types of creative writing in various semesters, as announced in class schedule. *Prerequisites:* 3 hours of a 2000-level creative writing class in the appropriate genre and consent of instructor.

4061. Rhetorical Theory and Criticism. 3. An investigation into how rhetorical theory, spanning from its ancient roots in Aristotelian thinking to its current postmodern components, operates in society. Explores how various critical

methods can be utilized to gain a stronger understanding of public communication texts, including newspapers, speeches, music and film. Cross listed with COJO 4061; dual listed with ENGL 5061. *Prerequisites:* COJO 1040 and 3040 or ENGL 2035.

4070. Film Directors:_____ 3 (Max. 6). Offers an intensive examination of representative films by selected film makers. *Prerequisite:* 6 hours of 2000-level literature courses.

4075. Writing for Non-Profits. 3. Designed for students interested in working in the non-profit sector. Explores rhetorical, political and social dimensions of writing and communicating in the non-profit world and features intensive study of special topics and problems related to non-profit communication, including activism, grant writing, organizational rhetoric, and non-profit genres. Content varies. *Prerequisite:* WB.

4080. Film Genre Studies:_____ 3 (Max. 6). Offers structural, film historical and political analyses of selected major film genres. *Prerequisite:* 6 hours of 2000-level literature courses.

4090. Film and Religion. 3. [C1◀(none)] Movies use religion to convey messages; they debate religious issues and use religion to debate non-religious issues. This course analyzes how film makers use religion and religious themes to transform religions into advocates for social issues and to shape religion's role in society. Popular films drawn from many genres. *Prerequisite:* 6 hours of 2000-level or higher literature courses or religion courses.

4110. Shakespeare: Romantic Comedies and History Plays. 1.5-4 (Max. 4). [C1◀(none)] *Prerequisite:* 6 hours of 2000-level literature courses.

4120. Shakespeare: Tragedies and Romances. 1.5-4 (Max. 4). [C1◀(none)] *Prerequisite:* 6 hours of 2000-level literature courses.

4140. English Drama: Restoration and 18th Century. 3. A study of the development of the drama from 1660 to 1800, including comedy of manners, heroic drama, tragedy, sentimental comedy, laughing comedy, satire, ballad opera and burlesque. *Prerequisite:* 6 hours of 2000-level literature courses.

4150. Modern Drama. 3. Focuses on development and shape of modern theatre. Plays are treated as dramatic literature, performed art and manifestations of a social and philosophical milieu. *Prerequisite:* 6 hours of 2000-level literature courses.

4160. Chaucer. 3. A study of the major works. *Prerequisite:* 6 hours of 2000-level literature courses. (Alternates with ENGL 4180)

4170. Early English Renaissance Literature: 16th Century. 3. A study of prose, poetry and drama from More through Shakespeare. Also studies developments in primary genres, styles, aesthetic values and intellectual concerns of the period's literature. *Prerequisite:* 6 hours of 2000-level literature courses.

4180. Middle English Literature. 3. Surveys the literature of medieval England from the early 13th century to the mid-15th century. Focuses on language, literature and cultural history. *Prerequisite:* 6 hours of 2000-level literature courses. (Alternates with ENGL 4160)

4190. Milton. 3. The complete poetry and selected prose of John Milton, with emphasis on the art and meaning of *Paradise Lost*. *Prerequisite:* 6 hours of 2000-level literature courses.

4200. Later English Renaissance Literature: 17th Century. 3. A study of prose, poetry and drama from Bacon and Donne through Browne and Behn. Also studies developments in the primary genres, styles, aesthetic values and intellectual concerns of the literature of the period. *Prerequisite:* 6 hours of 2000-level literature courses.

4210. English Literature of the 18th Century: Restoration to Mid-Century. 3. A survey of poetry, satire, comedy of manners and the early novel, as well as literary, cultural, historical and philosophical works from the age of Dryden through the age of Swift and Pope. *Prerequisite:* 6 hours of 2000-level literature courses.

4220. English Literature of the 18th Century: Mid- to Late- Century. 3. A study of poetry, the novel, development of literary criticism, historical and cultural commentary, and biography from the age of Johnson and Boswell to the beginnings of romanticism. *Prerequisite:* 6 hours of 2000-level literature courses.

4230. Greek Tragedy. 3. Reading and discussion of major plays by Aeschylus, Sophocles, and Euripides, together with examination of the performance and social context of Greek drama, its use of traditional myths, and selected issues in contemporary scholarship on the tragedies. Cross listed with CLAS/THEA 4230. *Prerequisite:* 3 hours of classics courses. (Offered in spring in alternate years)

4240. English Literature of the 19th Century: Romantic Period. 3. A study of prose and poetry of authors who flourished between 1789-1832, such as Blake, Wordsworth, Coleridge, Keats, Shelley, Byron, Lamb, Hazlitt, Austen and Scott. *Prerequisite:* 6 hours of 2000-level literature courses.

4250. Poetry of the Victorian Age. 3. A study of major poetic forms practiced by Tennyson, Browning, Arnold and their successors. *Prerequisite:* 6 hours of 2000-level literature courses.

4260. English Prose Literature of the Victorian Age. 3. A study of political, social, economic, religious and aesthetic ideas, as analyzed by representative authors from Carlyle and Mill to the end of the century. *Prerequisite:* 6 hours of 2000-level literature courses.

4270. Classical Epic Poetry. 3. Reading and discussion of major works of Greek and Latin epic poetry, centered on Homer and Vergil. Also includes consideration of the background of these works (both mythological and historical) and the

development of the epic tradition in the ancient world. Cross listed with CLAS 4270. *Prerequisite:* completion of a USP WB course.

4280. Modern British Fiction. 3. Covers the novel in British literature from 1920 to present. *Prerequisite:* 6 hours of 2000-level literature courses.

4310. The English Novel: 18th Century to Early 19th Century. 3. Spans the novel's formative (experimental) period, to its Gothic moment. Representative authors from Defoe to Scott. *Prerequisite:* 6 hours of 2000-level literature courses.

4320. The English Novel: 19th Century to Early 20th Century. 3. Spans the novel's Victorian (realist) manifestation, to its Modernist reconsideration. Representative authors from Dickens to Woolf. *Prerequisite:* 6 hours of 2000-level literature courses.

4340. Modern Poetry. 3. A study of selected aspects of modern poetry, including poets, poems, poetics and other relevant matter, mainly in Britain and the United States, between the mid-19th century and present. *Prerequisite:* 6 hours of 2000-level literature courses.

4360. American Prose: Early Through Mid-19th Century. 3. A study of major fiction and relevant non-fiction, written in America from the beginning through the middle of the 19th century. *Prerequisite:* 6 hours of 2000-level literature courses.

4370. American Prose: 1865-1920. 3. A study of major fiction written in the late 19th and early 20th centuries in relation to rise of realism and naturalism. *Prerequisite:* 6 hours of 2000-level literature courses.

4430. Modern American Fiction. 3. Covers the novel in American literature from 1920 to present. *Prerequisite:* 6 hours of 2000-level literature courses.

4450. African American Novel. 3. [(none)♦D] Considers aesthetic dimension and cultural matrix of novels written by Black Americans. *Prerequisite:* 6 hours of 2000-level literature courses.

4460. American Indian Literature. 3. [C1♦(none)] Advanced critical study of the history of American Indian literature, emphasizing the authors' views of social change. Cross listed with AIST 4460. *Prerequisite:* 6 hours of 2000-level literature courses.

4470. Studies in Chicano Folklore. 3. [C1, G1♦(none)] Provides a survey of the origins, development and contemporary folklore of the Mexican American Chicano people of the United States with comparative relation to Mexico and other groups in the United States. Cross listed with CHST 4470. *Prerequisites:* CHST 1100 and WA.

4480. Regional Literature of the U.S.: The West. 3. Encompasses major themes and writers in western American literature. *Prerequisite:* 6 hours of 2000-level literature courses.

4500. American Folklore. 3. A study of American folklore, emphasizing verbal art. Students read primary sources, as well as some critical and theoretical work. Includes folklore fieldwork. *Prerequisite:* 6 hours of 2000-level literature and/or cultural anthropology.

4546. Agriculture: Rooted in Diversity. 3. [(none)♦C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AAST/AGRI/AIST/CHST/FCSC/HIST/AMST 4546. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4600. Studies in _____. 1-6 (Max. 12). Presents from semester to semester a variety of significant topics in American, English or other literatures. *Prerequisite:* 6 hours of 2000-level literature courses.

4610. Special Studies Abroad in _____. 1-6 (Max. 6). *Prerequisite:* 6 hours of 2000-level literature courses.

4620. Independent Reading in _____. 1-3 (Max. for M.A. 3; Max. 6). Involves independent study and research experience in given topic, person, movement in literature. *Prerequisites:* 6 hours of 2000-level literature courses, consent of instructor and permission of department chair.

4630. English Honors Thesis. 1-3 (Max. 3). Directed study under the supervision of an English honors thesis chairperson. Results in production of an English honors thesis. Maximum of three credits of ENGL 4630 can be applied to the degree. *Prerequisites:* consent of the Director of the English Honors Program, instructor and department chair.

4640. Studies in Emerging Fields and Approaches. 3 (Max. 12). Presents from semester to semester a variety of significant topics in emerging fields or approaches to literature written in English. *Prerequisite:* six hours of 2000 level literature courses.

4710. Research Writing for ESL Students. 3. A course in university research techniques and writing for graduate students for whom English is a second language. *Prerequisite:* consent of instructor.

4750 [3750]. Fundamentals of Linguistics. 3. Introduction to fundamentals of linguistic study, including phonology, morphology, semantics, pragmatics, and syntax, with a focus on the application of linguistic theory. Cross listed with ANTH/LANG 4750. *Prerequisite:* 8 hours of foreign language.

4770 [3770]. Sociolinguistics. 3. Following an introduction to the fundamentals of linguistic study, an examination of the relationship and interactions among language, society, and culture, including linguistic and social behaviors with regard to the creation and modification of cultural identity. Cross listed with ANTH/LANG 3770. *Prerequisite:* 8 hours of foreign language.

4780. History of the English Language. 3. Considers major sources of change in the English language historically, as well as some of the internal and external catalysts for the process. Identical to ANTH 4780. *Prerequisite:* ENGL 4750.

4785. Linguistics, Language Teaching and Social Context. 3. Introduces prospective teachers of English as second language to the basic components of language and to the social aspects of human language use. Explores a variety of concepts about language: how it is used and perceived, how languages change, how diverse cultures respond to such changes. Cross listed with LANG 4785. *Prerequisite:* WB.

4830. Victorian Women's Lives: Their Art, Literature and Culture. 3. [C1♦CA] Interdisciplinary approach to study of women's issues in art. Uses literary/cultural texts to reinforce/contradict and/or expand/enlarge the art historical basis. Topics include "domestic goddess," working women, prostitution, education, marriage and divorce. Cross listed with ART/WMST 4830, dual listed with ENGL 5830. *Prerequisite:* Either ART 2020 or WMST/ENGL 1080.

4950. The American Dream in Literature. 3. [C1♦(none)] A study of literary reflections of how certain cultural hopes, expectations and assumptions in the American experience have been enunciated, realized, frustrated and contradicted. Focuses on American literature of the 19th and 20th centuries. *Prerequisite:* 3 hours of 2000-level literature courses, 3 hours of American history.

4970. Writing Internship. 3 (Max. 6). Students work 6-8 hours per week as "writing interns" for a private business or public agency, performing specific writing/editing tasks for that client. Students are supported and enabled through a series of classroom sessions and individual meetings with the course instructor. Formal progress reports and a comprehensive final report are required. *Prerequisite:* successful completion of ENGL 4010, 4020, or 4050.

4980. Numerical Imaginings 3. [M3♦(none)]. An introduction to mathematical and statistical studies in literature and the literary tradition. *Prerequisites:* completion of QA and QB requirements, 6 hours of 2000-level literature courses.

4990. Senior Seminar in English Studies. 3. [W3♦WC] Considers methods, theories and history of the study of literature and writing. In readings, discussion, as well as oral and written presentations, students seek a broad perspective on knowledge and skills gained throughout study in the English major. *Prerequisite:* advanced (senior) standing in English.

Geography

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Department Chair: Gerald R. Webster

Professors:

WILLIAM L. BAKER, B.S. Oregon State University 1977; M.S. University of North Carolina 1980; Ph.D. University of Wisconsin 1987; Professor of Geography 1998, 1990.

THOMAS BUCHANAN, B.S. State University New York College-Cortland 1973; M.S. University of Wyoming 1975; Ph.D. University of Illinois 1979; Professor of Geography 1989, 1979; University of Wyoming President 2005.

GERALD R. WEBSTER, B.A. University of Colorado - Denver 1975; M.S. Western Washington University 1980; Ph.D. University of Kentucky 1984; Professor of Geography 2007.

Associate Professors:

WILLIAM J. GRIBB, B.S. Wayne State University 1973; M.A. University of Colorado 1975; Ph.D. Michigan State University 1982; Associate Professor of Geography 1993, 1988.

DEBORAH D. PAULSON, B.A. College of St. Benedict/St. John's University 1975; M.S. Northern Arizona University 1981; Ph.D. University of Hawaii 1992; Associate Professor of Geography 1998, 1990.

Assistant Professors:

CARL J. LEGLEITER, B.S. Montana State University 2002; M.A. University of California Santa Barbara 2004; Ph.D. 2008; Assistant Professor of Geography 2009.

STEVEN D. PRAGER, B.S. University of North Carolina-Charlotte 1992; M.A. 1995; Ph.D. Simon Fraser University 2002; Assistant Professor of Geography 2004.

JACQUELINE J. SHINKER, B.S. University of Arizona 1996; M.A. University of Oregon 1999; Ph.D. 2003; Assistant Professor of Geography 2005.

Visiting Assistant Professor:

JOHN PATRICK HARTY, B.S. Montana State University 1995; M.S. University of Utah 2000; Ph.D. Kansas State University 2007; Visiting Assistant Professor of Geography 2008.

Research Scientist:

JEFFREY D. HAMERLINCK, B.S. University of North Dakota 1988; M.P. University of Wyoming 1992; Director, Wyoming Geographic Information Sciences Center (WyGISC) 2004.

Assistant Research Scientist:

JAMES R. OAKLEAF, B.S. University of Wyoming 1991; M.P. 1995.

ZONGBO SHANG, B.S. Shenyang Agricultural University 1995; M.S. 1998; Ph.D. Chinese Academy of Sciences 2001.

Adjunct Faculty:

J. Michael Daniels, Ken Orvis

Professor Emeritus:

John L. Allen, Ronald E. Beiswenger, Lawrence M. Ostresh, Jr., Richard G. Reider

The department of Geography is comprised of faculty with interests and expertise in geography, planning, and resource management. The department focuses upon the following:

1. The origin and nature of the physical and cultural environment, how the physical environment and its natural resources form, and how the environment and natural resources affect the quality of life.
2. The ways in which people and institutions affect natural resources and the environment.
3. The variety of methods and techniques with which we solve or prevent problems through the planning and management of natural resources.
4. The way in which human arrangements and institutions (e.g. political, economic, social) interact to produce diverse human landscapes.

Nine Fundamentals of Geographic Learning

The Department of Geography has identified nine fundamental elements of geography to emphasize in its undergraduate curriculum. These nine elements are at the intersection of topically important areas in the discipline of geography. We continue to evaluate student learning in our program to insure our curriculum addresses these fundamental elements as effectively as possible.

Element 1 – Human-Environment Interactions

Students shall be able to characterize and evaluate how human modifications of the environment effect Earth's biophysical systems, and how Earth's biophysical systems influence and modify human activity.

Element 2 – Spatial Variation

Students shall develop the ability to identify and evaluate the dynamics of spatial variations in the human and physical environments.

Element 3 – Place

Students shall develop the ability to recognize and understand the processes by which humans give meaning to places.

Element 4 – Biophysical Systems

Students shall be able to identify and explain the array of patterns, processes, and interactions in Earth's biophysical systems occurring at different spatial scales.

Element 5 – Scale

Students shall be able to recognize and explain how local, regional, and global processes interact to produce physical and human systems.

Element 6 – Change

Students shall recognize that human and physical systems are characterized by constant change, and that an appreciation of the past, current, and future conditions of these systems is vital to understand the nature of geographic phenomena.

Element 7 – Visualization and Representation

Students shall develop the ability to use multiple methods to represent and visualize Earth and its geographic characteristics, and to appropriately interpret their meaning.

Element 8 – Geographic Methods and Analysis

Students shall demonstrate the ability to recognize the appropriate tools and techniques for solving geographic problems and conducting geographic analysis.

Element 9 – Human/Cultural Systems

Students shall be able to identify and explain the patterns, processes, and interactions of people on Earth through their resulting settlements, movements, their cultural mosaic, and economic activities.

Undergraduate Major

In addition to course work required by the university and the college, majors must complete 40 hours of department requirements. Students in both the B.A. and B.S. programs must complete the following:

Core requirements:	13 hours
GEOG 1000 World Regional Geog	3
GEOG 1010 Intro to Physical Geography	4
GEOG 1020 Intro to Human Geog	3
GEOG 2150 Map Use & Analysis	3

Content areas. 27 hours distributed among a minimum of three of the following areas with at least two courses in each of two areas:

- Human geography
- Physical geography
- Geographic information science
- Natural resource management/recreation

Courses which satisfy content area requirements are identified by the following codes which appear at the end of the course descriptions: (H) human geography, (P) physical geography, (A) geographic information science, (R) natural resource management/recreation. Courses used to meet department requirements must be approved by the faculty adviser. The remaining credit hours needed for completion of the B.A. or B.S. are elective credits (approximately 13-15).

Undergraduate Concentrations

Although students are encouraged to sample from the wide variety of courses within the geography program, and the general geography major is an option selected by many students, most undergraduate majors choose to specialize in one of the department’s areas of concentration.

Concentration in Physical Geography. Offerings in this concentration include an introductory survey of the natural environment and advanced course work in areas that include landforms, soils, weather and climate, glacial and periglacial environments, paleoenvironments, and biogeography. Course work in this concentration is frequently related to ongoing faculty research programs and activities. Courses in this concentration are designated with (P) in the following course listing. The concentration consists of 16 hours to include:

GEOG 1010 Intro to Phys Geog.....	4
<i>and any four of the following courses</i>	
GEOG 3010 Landforms/Soils.....	3
GEOG 3450 Weather/Climate	3
GEOG 3480 Environmental Change.....	3
GEOG 3550 Natural Hazards.....	3
GEOG 4000 Terrain Analysis.....	3
GEOG 4410 Soil Geomorphology	4
GEOG 4450 Fluvial Geomorphology	3
GEOG 4460 Biogeography.....	3
GEOG 4470 Fire Ecology.....	3

Concentration in Geographic Information Science. The concentration in geographic analysis focuses upon the interface between geography and the computer. It offers specialized training in a variety of analytic tools and methods courses ranging from the design and preparation of maps using computer-aided mapping programs to the spatial analysis of physical and human phenomena using detailed computer-based geographic-based geographic information systems (GIS). Courses in this concentration are designated with an (A) in the following course listing. Students must maintain a 3.0 GPA in GIS courses. The concentration consists of 19 hours to include:

GEOG 2150 Maps Use & Analysis	3
GEOG 4200 Geographic Info Sys I	4

And at least 12 credits from among the remaining courses.

GEOG 3150 Survey of Remote Sensing.....	3
GEOG 4000 Terrain Analysis.....	3
GEOG 4111 Remote Sensing of Env	4
GEOG 4150 Cartography & Dig Map Des	4
GEOG 4210 Geographic Info Sys II.....	4
GEOG 4211 Adv Remote Sensing of Env	4
GEOG 4220 Spatial Modeling & Geocomp	4
GEOG 4240 GIS for Bus. & Ind.....	3
GEOG 4280 Quant Methods	4
GEOG 4300 Intro to GPS in Nat Res Mgt.....	3

Concentration in Natural Resource Management/Recreation. This concentration provides a broad interdisciplinary approach to the management of natural and recreational resources, with emphasis on the Rocky Mountain region. Resource management is a major focus of departmental faculty and encompasses an array of topics, including physical and social aspects of natural resource management, management of fire in natural systems, public land management, hazard studies, the planning-managing-administration of recreation and tourism resources,

and the geographic analysis of resource systems. Courses in this concentration are designated as (R) in the course listing. The concentration consists of 15 hours to include:

GEOG 4040 Conservation of Natural Resources	3
<i>and any four of the following courses</i>	
GEOG 2550 Recreation Nat Resources.....	3
GEOG 3550 Nat Hazards.....	3
GEOG 4000 Terrain Analysis.....	3
GEOG 4051 Env Politics	3
GEOG 4052 Fed Land Politics.....	3
GEOG 4080 Mgmt. Maj. River Basins	3
GEOG 4111 Remote Sensing of Env	4
GEOG 4211 Adv Remote Sensing of Env	4
GEOG 4310 Planning Theory	3
GEOG 4370 Environmental Planning.....	3
GEOG 4400 Nat Resource Policy	3
GEOG 4420 Tourism/Recreation.....	3
GEOG 4460 Biogeography.....	3
GEOG 4470 Fire Ecology.....	3
GEOG 4750 Public Land Mgmt.	3

Concentration in Human Geography. The human geography concentration examines how societies organize their economic, cultural, and political activities spatially, and how human societies interact with their environments. Courses in the concentration are directed toward economic, cultural, regional, and global studies. Students in this concentration typically take a variety of courses from related fields such as sociology, political science, economics, international studies, and American studies. Courses within this concentration are designated with (H) in the course listing. The concentration consists of 15 hours to include:

GEOG 1000 World Reg Geog.....	3
GEOG 1020 Human Geog.....	3

<i>and any three of the following courses</i>	
GEOG 2370 Chicano History.....	3
GEOG 3030 Geog Development.....	3
GEOG 3050 Econ Geography.....	3
GEOG 3550 Nat Hazards.....	3
GEOG 4050 Interm Econ Geography	3
GEOG 4310 Planning Theory	3
GEOG 4500 The American Landscape	3
GEOG 4520 Regional Geography.....	3
GEOG 4540 Cultural Ecology.....	3

Concentration in Planning. The concentration in planning offers students a pre-professional curriculum; many students in this concentration go on to complete a graduate degree in the department’s graduate planning program. The planning specialty examines the environmental, social and economic factors that influence community and regional change. The program is designed to integrate community visions with current conditions to determine options for the future. The emphasis of the planning concentration is on natural resource and rural community planning, approached from an interdisciplinary perspective.

Courses within this concentration are designated with (PL) in the course listing. The concentration consists of 15 hours to include:

GEOG 4310 Planning Theory	3
GEOG 4330 Land Use Planning.....	3
<i>and any three of the following courses</i>	
GEOG 4325 Legal Aspects of Planning.....	3
GEOG 4340 Natural Res. Mgmt on Western Reservations	3
GEOG 4370 Environmental Planning.....	3
GEOG 4390 Rural/Small Town Plan	3
GEOG 4400 Natural Resource Policy.....	3
GEOG 4750 Pub Land Mgt	3

Undergraduate Minor

The department offers minors in geography, planning, and geographic information sciences. Credit requirements range from 18–20 hours of required and elective courses, all of which must be completed with a grade of C or above. Information on the minor programs is available from the department.

Environment and Natural Resources

The department offers a concentration in the university's interdisciplinary program, Environment and Natural Resources. A description of the concentration requirements is available in the departmental office.

Graduate Degrees

The department offers graduate degree programs with specialization in: planning, natural resource management, geographical information sciences (GIS), physical geography, human geography, and water resources. For further information consult the *Graduate Bulletin*.

Geography (GEOG)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000 [G&R 1000]. World Regional Geography. 3. [C2, G1↔CS, G] Covers the distributions, traits, and processes of the Earth's peoples and landscapes through the perspective of regional geography, which is the study of the spatial relationships of natural environments and human societies. (Offered both semesters)

1010 [G&R 1010]. Introduction to Physical Geography. 4. [S3↔SE] Systematically studies natural aspects of geographic environments, including weather and climate, landforms, soils and vegetation. Lab fee required. (Offered both semesters)

1020 [G&R 1020]. Introduction to Human Geography. 3. [C2, G1↔CS, G] Analyzes spatial patterns of and interaction between the world's great cultural systems. Includes settlement patterns, behavioral patterns, agricultural land use and resource utilization. (Offered both semesters)

1050 [G&R 1050]. Introduction to Environment and Natural Resources. 3. [C2, G1↔(none)] Examines human interaction with environment, ranging from regional to global scales, from perspectives of environmental effects on human life, human effects on environment and approaches to environmental management. (Normally offered spring semester)

2150 [G&R 2150]. Map Use and Analysis. 3. Survey of the use of maps to communicate ideas and opinions about places, and the analysis and presentation of mapped data to solve spatial or geographic problems. (Normally offered fall semester)

2200. [G&R 2200]Geography of Wyoming and the West. 3. Covers the distributions, traits, and processes of Wyoming's people and landscapes, and their context in the West, through the perspective of regional geography. *Prerequisite:* GEOG 1010 or 1020. (Offered based on sufficient demand and resources)

2370. Chicano History: Origins to 1900. 3. [C2, G1↔CS, D] General survey that traces the geographic distribution and historical processes that have shaped the life experiences, socio-economic development and cultural contributions of peoples of Mexican descent in the United States from their indigenous and Hispanic origins to the end of the 19th century. Cross listed with CHST/HIST 2370. (H)

2550 [G&R 2550]. Recreation and Natural Resources. 3. [C2↔(none)] Introduces outdoor recreation agencies and programs; supply and demand for outdoor recreation resources; and relationship of recreation to the conservation of natural resources. *Prerequisite:* GEOG 1200. (Normally offered fall semester) (R)

3010 [G&R 3010]. Landforms and Soils. 3. Systematically studies types, origins and distributions of various landforms and soils. Travel fee required. *Prerequisite:* GEOG 1010. (Offered based on sufficient demand and resources) (P)

3030 [G&R 3030]. Geography and Development. 3. [C2, G1↔CS, G] Examines distribution of wealth and poverty in the world; theories of development, from traditional modernization theories through Marxist critiques and sustainable development; and case studies from around the world of development successes and failures, chosen to illustrate and illuminate theories of development. *Prerequisite:* GEOG 1000 or 1020 or 3 hours of social science with global focus. (Offered once every two years in spring semester) (H)

3050 [G&R 3050]. Economic Geography. 3. Conceptually examines explanations underlying location of agricultural and industrial activities, as well as spatial dynamics governing these systems. (Normally offered fall semester every other year) (H)

3150. Survey of Remote Sensing Applications. 3. Provides an introduction to remote sensing with a survey of applications in different fields. It include a brief introduction to fundamental of remote sensing and surveys applications of aerial photography, multi-and

hyperspectral, active and thermal remote sensing, and global change remote sensing. Cross listed with BOT 3150. *Prerequisites:* completion of a USP QA course and one science course with laboratory. (A)

3450 [G&R 3450]. Weather and Climate. 3. Systematically examines elements and controls of weather and climate with application to regions. *Prerequisite:* GEOG 1000, 1010 or 1020. (Normally offered spring semester) (P)

3480 [G&R 3480]. Environmental Change. 3. [(none)↔WB, G] Examines changes in the bio-physical environments and landscapes of Earth during its habitation by humans. Emphasizes integrated approaches to understanding environmental changes based on climatological, ecological, geological, archeological, and historical evidence. Explores how humans have modified Earth's environments and how societies have responded to natural and anthropogenic environmental change. Cross listed with ESS 3480. *Prerequisites:* GEOG 1010 or any USP S, SB, SE or SP course; any WA course. (P)

3550 [G&R 3550]. Natural Hazards and Society. 3. [C2↔CS] Considers societal structures and processes as they interact with hazards in the natural environment. (Offered based on sufficient demand and resources) (H,P,R)

4000 [G&R 4000]. Terrain Analysis. 3. Studies techniques for acquiring and analyzing spatial data from maps, remotely sensed imagery and field surveys for landscape assessment. Emphasizes deriving maps that describe physical suitability of landscapes for specific human activities. Field trip required. *Prerequisites:* GEOG 2150 and junior standing. (P,A,R)

4013. Political Geography. 3. Geographic space is subdivided into political units to aid human interaction and to facilitate political processes. Examines the spatial organization of political space and its effects upon political processes at varying geographic scales ranging from the local to international. Dual listed with GEOG 5013; cross listed with POLS 4013. *Prerequisite:* GEOG 1000 or 1020, or 9 hours of social science.

4040 [G&R 4040]. Conservation of Natural Resources. 3. [C2, G1↔CS] Geographically analyzes conservation of natural and human resources, as well as political, social and ethical ramifications of our environmental policy. Cross listed with BOT 4040. *Prerequisite:* 6 hours of geography or ENR. (R)

4050 [G&R 4050]. Intermediate Economic Geography. 3. Studies spatial interaction of pertinent physical, economic and social variables as they influence behavior of industrial, agricultural and commercial activities. *Prerequisite:* GEOG 3050. (Offered based on sufficient demand and resources) (H)

4051 [G&R 4051]. Environmental Politics. 3. [C2, W3♦WC] Analyzes environmentalism as a political phenomenon. Provides students with a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with AMST, ENR, POLS and REWM 4051. *Prerequisite:* POLS 1000. (R)

4052 [G&R 4052]. Federal Land Politics. 3. Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with POLS/ENR/AMST/REWM 4052. *Prerequisite:* POLS 1000. (R)

4080 [G&R 4080]. Management of Major River Basins. 3. Examines geography of water resources, including distribution, water as a resource and water as a hazard to humans. Focuses on water management case studies on the scale of major river basins in North America and elsewhere in the world. *Prerequisites:* GEOG 4040 and junior standing. (Offered based on sufficient demand and resources) (R)

4111. Remote Sensing of the Environment. 4. Combined lecture and laboratory course introduces students to the fundamentals of remote sensing with a strong emphasis on vegetation, land cover and environmental applications. Students learn to use digital spectral data to distinguish characteristics of the terrestrial biosphere important for ecological and land management applications. Dual listed with GEOG 5111; cross listed with BOT 4111. *Prerequisites:* QA and one science course with lab.

4113. Geological Remote Sensing. 4. Acquaints students with aircraft and spacecraft remote sensing of the environment, emphasizing geologic application to earth and other planetary bodies. Includes visible, infrared, ultraviolet, radio and radar sensing. Laboratory exercises are applications related to tectonics, geomorphology, paleoclimate, structure, stratigraphy, environmental geology and geologic hazards. Dual listed with GEOG 5113; cross listed with GEOL 4113. *Prerequisites:* GEOL 1005 or 1100 or 1200 or GEOG 1010 and MATH 1400/1405 or MATH 1450.

4150 [G&R 4150]. Cartography and Digital Map Design. 4. Studies techniques for effectively selecting, analyzing and graphically displaying geographic information. *Prerequisite:* GEOG 2150. (Normally offered spring semester) (A)

4200 [G&R 4200]. Introduction to Geographic Information Systems. 4. Fundamental concepts, theories and applications in

geographic information systems and science. Dual listed with GEOG 5200. *Prerequisite:* GEOG 2150. (Normally offered fall semester) (A)

4210 [G&R 4210]. Advanced Geographic Information Systems. 4. Advanced study of programs, data structures, and techniques for spatial data display and analysis. Dual listed with GEOG 5210. *Prerequisite:* GEOG 4200. (Normally offered spring semester) (A)

4211. Advanced Remote Sensing of the Environment. 4. Includes lecture and laboratory. Specific topics include a review of remote sensing fundamentals and methods for using high spatial resolution data, hyperspectral data, active remote sensing, advanced image processing, advanced classification techniques and statistical techniques specific to exploring remotely sensed data. Cross listed with BOT 4211; dual listed with GEOG 5211. *Prerequisite:* BOT/GEOG/GEOL 4111. (A, R)

4220. Spatial Modeling and Geocomputation. 4. Examines the theory and development of models of spatial patterns and process. Modeling these systems often required techniques not readily available in a GIS environment. Examines GIS and geocomputational methods to solve these problems as well as issues related to error, representation, and scale. Dual listed with GEOG 5220. *Prerequisite:* GEOG 4200/4210. (A)

4240. GIScience for Business and Industry. 3. Examines a variety of roles that GIScience plays in the modern day business landscape. Through a combination of lectures and hands-on work with some of the same tools employed by industry, students will become acquainted with the roles and applications of GIScience in a business context. Dual listed with GEOG 5240. *Prerequisite:* junior standing; QB. (A)

4280 [G&R 4280]. Quantitative Methods. 4. [M3♦(none)] Examines and utilizes mathematical and statistical tools in analyzing geographic and spatial data. Dual listed with GEOG 5280. *Prerequisite:* STAT 2070 or equivalent. (Normally offered spring semester) (A)

4300 [G&R 4300]. GPS for Natural Resource Management. 3. Introduction to the basic concepts of global positioning systems, project planning and development, integration into a GIS, and its applications to natural resource management. Dual listed with GEOG 5300. *Prerequisites:* senior status and GEOG 2150. (A)

4310 [G&R 4310]. Planning Theory. 3. Explores the planning history, components and process, as well as the roles of citizens, decision-makers and planners at all levels of government-federal, state and local. *Prerequisite:* junior standing. (Normally offered fall semester) (H,R, PL)

4325 [G&R 4325]. Legal Aspects of Planning. 3. Review of the U.S. Constitution, federal and state laws and statutes, and pertinent court cases that directly relate to planning policy at the federal, state and local level. Examination of the legal system to provide services and protect the

health, safety, and welfare of citizens with regard to private property rights. *Prerequisites:* junior standing, USP "V" course. (PL)

4330 [G&R 4330]. Land Use Planning. 3. Advanced study of processes expressed as a specific activity on the land. An examination and analysis of the interacting environmental, economic, and social factors that produce the land activity. Dual listed with GEOG 5330. (PL)

4340 [G&R 4340]. Natural Resource Management on Western Reservations. 3. Designed to examine natural resource management techniques on western reservations. Topics to be discussed will focus on the management and planning of water, grazing, extractive industries and forestry. Field work on the Wind River Indian Reservation is a part of the class. Cross listed with AIST 4340. *Prerequisite:* 6 hours of 2000-level AIST classes. (PL)

4370 [G&R 4370]. Environmental Planning. 3. A planning-oriented approach to ecosystems theory based on the federal/legal regulatory foundation. An examination of scientific and alternative perspectives on the comparative dynamics of natural and human-oriented ecosystems and implementing strategies. Dual listed with GEOG 5370. (PL, R)

4390 [G&R 4390]. Rural & Small Town Planning. 3. A single community planning problem is assigned. Student teams play the role of community planning staff. Teams experience defining community goals; communicating with others about these goals and problem perceptions; accomplishing necessary research; generating various solutions to problems they have perceived; selected from among these solutions, and formulating a single, integrated, comprehensive plan and documenting the plan and rationale behind it. Dual listed with GEOG 5390. *Prerequisite:* work at the 4000-level in one or more of the four substantive areas, and/or consent of the instructor. (PL)

4400 [G&R 4400]. Natural Resource Policy. 3. Encompasses administrative policies and programs relating to natural areas. Emphasizes the national park system. *Prerequisite:* GEOG 4750. (Offered fall semester of odd-numbered years) (R, PL)

4420 [G&R 4420]. Tourism and Recreation. 3. Studies concepts, methods, conflicts and opportunities of national and international tourism. Emphasizes recreation and the environment. *Prerequisite:* GEOG 1200. (Normally offered spring semester) (R)

4450 [G&R 4450]. Fluvial Geomorphology. 3. Examines rivers and river-related landforms. Investigates the physical processes by which water transports and deposits sediment to generate landforms ranging in scale from hillslope rills to continental drainage systems. Emphasizes surface water hydrology, erosion, sedimentation, channel morphology, and the influences of climate change and human activities on fluvial systems. Dual listed with GEOG 5450. *Prerequisites:* GEOG 3010 and GEOL 2100 or 2150. (P)

4460 [G&R 4460, 3460]. Biogeography. 3. A systematic study of the distribution of plants and animals, communities and ecosystems, the processes that produce patterns of distribution and their change over time. Interactions of climate, soil geomorphology, biota and human activities are emphasized. *Prerequisites:* junior standing and GEOG 1010 or LIFE 2022 or 2023. (P, R)

4470 [G&R 4470]. Fire Ecology. 3. Natural and human-caused fires are an important phenomenon affecting ecosystems and human communities throughout the world. Explores the geography, ecology, and management of fires. Dual listed with GEOG 5470. *Prerequisite:* GEOG 4460, BOT 4700, LIFE 3400 or graduate standing. (P, R)

4500 [G&R 4500]. The American Landscape. 3. Provides a basis for interpreting the nature and content of the contemporary landscapes of the United States by viewing those landscapes in the process of creation and change and investigates the relationship between landscape and American environmental attitudes. Students are introduced to research techniques and methodologies in historical geography. *Prerequisite:* GEOG 1010 or 1020, or 6 hours in social science. (H)

4540 [G&R 4540]. Topics in Cultural Ecology:_____ 3 (Max. 6). [C2, W3, WC] Examines selected topics of human-environment interaction from a cultural ecological perspective. May be repeated for a maximum of 6 credits under different course topics. Dual listed with GEOG 5540. *Prerequisites:* junior standing and 4 hours biological or earth science and 6 hours social science. (H)

4750 [G&R 4750, 4700]. Public Land Management. 3. Teaches management of the federal and public lands of the United States. Includes consideration of management issues, agencies and organizations, and management approaches for public lands and associated natural resources. Dual listed with GEOG 5750. *Prerequisite:* 6 hours of geography or ENR. (Offered once a year) (R, PL)

4860 [G&R 4860]. Field Studies. 1-6 (Max. 6). Intensive introduction to field methods used in geographic research in one or more of the subdivisions of geography. Dual listed with GEOG 5860.

4865 [G&R 4865]. Directed Studies/Research Problems. 1-6 (Max 6). Intensive introduction to methods used in geographic research. Dual listed with GEOG 5865. *Prerequisites:* consent of instructor and at least 12 hours in geography.

4870 [4990]. Practicum. 1-6 (Max. 12). Experience in applying student skills and training in an agency, organization, or business. Offered for S/U only. Dual listed with GEOG 5870. *Prerequisites:* for majors only, minimum of 12 hours in the major, junior standing and consent of the instructor. (Offered fall, spring and summer)

4875 [G&R 4875, 4950]. Independent Studies. 1-6 (Max. 6). Considers current research topics in consultation with faculty member. Dual listed with GEOG 5875. *Prerequisite:* 9 hours in subject area of topic of current research. (Offered fall, spring and summer)

4880 [G&R 4880, 4850]. Current Topics. 1-6 (Max. 9). Special course on a topic of current interest. Dual listed with GEOG 5880. *Prerequisite:* junior standing. (Offered fall, spring and summer)

4885 [G&R 4885, 4900]. Seminar: _____ 1-3 (Max. 6). Faculty-student discussion, reading, and study focused on a selected topic and interest. Dual listed with GEOG 5885. *Prerequisite:* GEOG 4680, 4750. (Offered based on sufficient demand and resources)

Geology and Geophysics

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Professors:

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CAROL D. FROST, A.B. Dartmouth College 1979; Ph.D. Cambridge University 1984; Professor of Geology 1995, 1983.

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ARTHUR W. SNOKE, A.B. Franklin and Marshall College 1967; Ph.D. Stanford University 1972; Professor of Geology 1984.

MAUREEN B. STEINER, B.S. Southern Methodist University 1966; M.S. 1967; Ph.D. University of Texas-Dallas 1975; Professor of Geology 1994, 1976.

Associate Professors:

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KENNETH G. DUEKER, B.A. Whitman College 1984; Ph.D. University of Oregon 1994; Associate Professor of Geophysics 2006, 2000.

ROBERT R. HOWELL, B.S. University of Michigan 1974; Ph.D. University of Arizona 1980; Associate Professor of Geology and Geophysics 1992, 1986.

JOHN KASZUBA, B.S. Beloit College 1982; M.S. Virginia Polytechnic Institute & State University 1986; Ph.D. Colorado School of Mines 1997; Associate Professor of Geology and the School of Energy Resources 2008.

Assistant Professor:

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MARK T. CLEMENTZ, B.S. University of Missouri, Columbia 1996; Ph.D. University of California, Santa Cruz 2002; Assistant Professor of Geology 2005.

CLIFFORD S. REIBE, B.S.E. University of Michigan 1992; Ph.D. University of California-Berkeley 2000; Assistant Professor of Geology 2008.

BRYAN N SHUMAN, B.A. Colorado College 1994; M.S. Brown University 1997; Ph.D. 2001; Assistant Professor of Geology 2007.

YE ZHANG, B.S. Nanjing University (PR China) 1998; M.S. University of Minnesota 2004; Ph.D. Indiana University 2005; Assistant Professor of Geology 2007.

Lecturers:

ERIN CAMPBELL-STONE, B.A. Occidental College 1992; Ph.D. University of Wyoming 1997; Associate Lecturer 2005, 2001.

RANDI S. MARTINSEN, B.S. S.U.N.Y. Stony Brook 1971; M.S. Northern Arizona University 1975; Senior Lecturer 1995.

Research Scientists:

STEVEN BOESE, B.A. University of Minnesota 1972; Ph.D. University of Wyoming 1978; Senior Research Scientist 1989, 1975.

KEVIN R. CHAMBERLAIN, B.A. Colgate University 1979; Ph.D. Washington University 1990; Research Professor 2004, 1990.

SUSAN SWAPP, B.A. Indiana University 1977; M.S. Yale University 1978; Ph.D. 1982; Senior Research Scientist 1994.

Adjunct Professors:

Eric Erslev, Warren B. Hamilton, Peter H. Hennings, David A. Stephenson

Professors Emeriti:

Donald W. Boyd, James I. Drever, William E. Frerichs, Jason A. Lillegraven, Ronald W. Marrs, James E. McClurg, Brainerd Mears, Jr., Peter Shive, Scott B. Smithson, James R. Steidtmann, Ronald C. Surdam

Geology is the study of the origin, history and structure of the earth. Our undergraduate offerings encompass virtually every aspect of the science, with emphasis on current theory, methods and applications. The philosophy of the department is to provide sound training in both theory and field observation, and to couple this background with a thorough education in modern laboratory, quantitative and field techniques required for an understanding of geologic processes.

The setting of the university in the Rocky Mountains is ideal because some of North America's most outstanding geologic features are within a short drive of campus. The semi-arid climate in southeastern Wyoming has resulted in excellent exposures of diverse rock types ranging in age from Precambrian to Recent. Deformation of the rocks in the region has been extensive, affording the student a field laboratory that exhibits a wide diversity of styles of faulting and folding. Mineral deposits, petroleum resources and coal abound in the region.

Undergraduate Majors

The Bachelor of Science in geology is designed for those students who intend to become professional geologists and/or those who plan to attend graduate school in geosciences. The program includes courses normally expected of graduate school applicants, including a summer field camp and courses in related sciences and mathematics. This degree program prepares students for the examination for the professional geologist license.

The Bachelor of Arts in geology and Earth sciences is specifically designed for undergraduates who wish to study Earth sciences as a foundation for careers in a variety of areas, such as environmental law, natural resource business, land use planning, Earth science education, science journalism, and many governmental positions. The B.A. program includes a broad spectrum of courses, and focuses both on information about the Earth and on how society makes decisions that affect the Earth system.

The Bachelor of Science in Geology/Environment and Natural Resources and the Bachelor of Arts in Geology and Earth Sciences/Environment and Natural Resources are designed for students with interests in environmental geology. Students must complete the requirements for the B.S. in Geology or the B.A. in Geology and Earth Sciences plus requirements established by the School of Environment and Natural Resources. The ENR curriculum is designed to complement either geology degree with scientific, socio-political and cul-

tural concerns in environmental problem solving. Students should consult the section on the School of Environment and Natural Resources.

The Department of Geology and Geophysics also participates in the Earth System Science interdisciplinary program by offering a concentration in geology for the B.S. degree in ESS. Students interested in this major should consult the section on Earth System Science for curriculum requirements.

Geology Program Objectives: Bachelor of Science

The primary mission of our B.S. geology program is to provide a quality educational experience that prepares men and women to enter careers in geology and related fields. We expect that our graduates should:

- Have the basic knowledge and skills demanded for entry-level competence in typical careers in earth science.
- Be able to apply basic scientific and technical knowledge to specific tasks and problems.
- Cultivate the specific scientific and technical skills that will allow them effectively to serve their employers and to enhance their own career development.
- Develop increased capacity in the skills of independent learning, critical thinking, problem definition, and problem solving.
- Develop enhanced numerical skills and computer literacy as part of an undergraduate program designed to deliver a current and relevant knowledge of their discipline.
- Communicate effectively and professionally through oral, written, and graphical means and to participate effectively in their workplace and in individual and team-related activities.
- Have the broad general education needed to appreciate the role of Earth Sciences in the societal context and appreciate the importance of ethics in the practice of the profession.

Geology Program Goals: Bachelor of Science

The department of Geology and Geophysics has the following specific goals for its B.S. program:

- Students in the B.S. program will receive a quality preparatory education in the discipline that is current, relevant, practical, and personal.
- B.S. students who graduate with appropriate grades will be able to compete successfully for positions at graduate schools nationwide.
- B.S. students who graduate with appropriate grades will be well prepared for entry-level positions as professionals within their and other related disciplines.

Geology Program Objectives: Bachelor of Arts

The primary mission of our B.A. geology program is to provide a broad educational experience that prepares men and women for careers in earth science-related fields. We expect that our graduate should:

- Have the basic knowledge and skills demanded for entry-level competence in typical careers in earth science-related fields.
- Be able to apply their knowledge to specific situations or problems.
- Cultivate the skills and ethics that will allow them effectively to serve their employers and to enhance their own career development.
- Develop increased capacity for independent learning, critical thinking, and problem solving.
- Develop basic numerical skills and computer literacy as part of an undergraduate program designed to deliver a current and relevant knowledge of their discipline.
- Communicate effectively and professionally through oral, written, and graphical means and to participate effectively in the work environment, both in individual and team-related activities.
- Have the broad general education needed to appreciate the role of Earth Sciences in the societal context and appreciate the importance of ethics in the practice of the profession.

Geology Program Goals: Bachelor of Arts

The department of Geology and Geophysics has the following specific goals for its B.A. program:

- Students in the B.A. program will receive a broad preparatory education in earth science and related fields that is current, relevant, practical, and personal.
- B.A. students who graduate with appropriate grades will be able to compete successfully for positions at graduate schools nationwide.
- B.A. students who graduate with appropriate grades will be well prepared for entry-level positions in the geosciences and other related disciplines.

Required Academic Performance

In order to graduate with a Bachelor of Science or Bachelor of Arts degree in geology, the student must earn a letter grade of C (S where appropriate) or better in each course listed herein as part of the required course programs. This grade requirement applies to course work taken outside the department, as well as to transfer courses credited in lieu of resident requirements.

Bachelor of Science Curriculum

Geology Program

I. Required Courses Hrs.

A. Each of the following:

GEOL 1000-level intro lab course(s).....	4-8
GEOL 2000 Geochemical Cycles & Earth System	4
GEOL 2005 Intro to Geophysics	4
GEOL 2010 Mineralogy	5
GEOL 2100 Stratig/Sedimentation	4
GEOL 4610 Structural Geol/Tectonics	4
GEOL 4717 Field Course in Geology.....	6
GEOL 4820 Capstone.....	3

B. Three courses from the following:

GEOL 2020 Intro to Petrology	4
GEOL 2050 Principles of Paleontology.....	3
GEOL 4880 Earth Surface Processes	3
GEOL 4835 Applied/Exploration Geophysics..	3
GEOL 4490 Geochemistry.....	3
GEOL 4444 Geohydrology.....	4

C. Each of the following:

Six hours of GEOL 2000-level courses or higher, including 2000-level courses not elected from Group B.

II. Allied Math and Sciences

(20 credits)

Hrs.

CHEM 1020 or 1050 General Chem I.....	4
CHEM 1030 or 1060 General Chem II.....	4
MATH 2200 Calculus I.....	4
MATH 2205 Calculus II.....	4
PHYS 1110 or 1210 Gen or Engr Physics.....	4

Note: This program represents a minimum proficiency. Students are strongly advised to elect additional courses in geology.

Bachelor of Arts in Geology and Earth Science Curriculum

I. Required Courses Hrs.

A. Each of the following:

GEOL 1000-level intro lab course(s).....	4-8
GEOL 2000 Geochemical Cycles & Earth System	4
GEOL 2100 Stratig/Sedimentation	4
GEOL 2080 or 3080 General Field Geology	3
GEOL 4820 Capstone.....	3
LIFE 1010 General Biology	4
CHEM 1020 General Chemistry I	4
PHYS 1110 General Physics I	4
MATH 1405 Trigonometry	3
or	
MATH 1450 Algebra/Trig.....	5

B. Six courses from the following:

ATSC 2000 Meteorology.....	4
or	
GEOG 3450 Weather and Climate.....	3
ECON 2400 Economics of the Environment.....	3
GEOG 3010 Landforms and Soils	3
GEOL 2005 Intro to Geophysics	4
GEOL 2050 Principles of Paleontology.....	3

GEOL 2070 Intro to Oceanography	4
GEOL 3600 Earth & Mineral Resources	4
GEOL 3650 Energy:Geological Persp.	4
GEOL 3400 Geologic Hazards	4
GEOL 3500 Global Change.....	4
GEOL 4444 Geohydrology.....	4
GEOL 4490 Geochemistry.....	3
GEOL 4610 Structural Geol/Tectonics	4
GEOL 4835 Applied/Exploration Geophysics..	3
POLS 4051 Environmental Politics and Admin	3
SOIL 4120 Genesis, Morphology, Classification of Soils	4
ECON 4400 Environmental Economics	3
or	
ECON 4410 Natural Resource Economics	3

C. Additional 12 hours of electives with adviser consultation, at least 6 hours of which must be taken outside of the Department of Geology and Geophysics.

Undergraduate Minor

A minor in geology requires 20 hours of coursework in the Department of Geology and Geophysics. Students are required to take GEOL 1100 or 1200; GEOL 2000; GEOL 3400, 3500, or 3600; and 8 additional credits in consultation with their adviser. A grade of C or better is required in each of these courses.

Graduate Program

The Department of Geology and Geophysics offers programs leading to the degrees of Master of Science and Doctor of Philosophy in either geology or geophysics. For further information, consult the *Graduate Bulletin*.

Geology and Geophysics (GEOL)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1001. Earth Science and Society. 1. [F1, S3↔I, L] Introduces students to the study of Earth Science and its role in society through examination and discussion of current events, and through projects researching geologic topics of societal interest. *Prerequisite:* GEOL 1100 or concurrent enrollment.

1005. Earth History. 4. [(none)↔S] Reviews the evolution of the Earth including: the creation of the Universe, formation of a layered earth, development and history of continents, controls on climate change, and the origin and evolution of life. Class introduces basic geologic, chemical, physical and biologic concepts used to decipher Earth history. *Prerequisites:* none.

1070. The Earth: Its Physical Environment. 4. [S3↔SE] Discusses selected topics from geology, astronomy and meteorology illustrating fundamental concepts, processes, products and the

interrelationships among them. Emphasizes nature of science and relationship between selected topics and society. Cross listed with ASTR 1070. *Prerequisites:* Math level 3 or equivalent courses, consent of instructor, elementary education major and EDCI 1450 must be taken concurrently.

1100. Physical Geology. 4. [S3↔SE] Studies modern concepts of the Earth's physical makeup including minerals and rocks, topography, crustal structure, plate tectonics and processes and forces acting on and within the earth. (Normally offered fall, spring and summer)

1200. Historical Geology. 4. [S3↔SE] Describes methods used for historical reconstruction, outlines the sequence of life recorded by the fossil record, and summarizes the physical evolution of North America.

1600. Global Sustainability: Managing Earth's Resources. 4. [(none)↔G, S]. Uses biology, chemistry, physics and Earth science to examine Global Sustainability and how this worldview might guide our future management of Earth resources. Case studies in different international settings place questions of resource exploitation (discovery, extraction, processing, use and disposal) and sustainability in a larger global context. *Prerequisites:* none.

2000. Geochemical Cycles and the Earth System. 4. [S3↔SE]. Introduces the Earth system, including the solid Earth, hydrosphere, biosphere and atmosphere. Emphasizes the evolution of the Earth, rock associations and geochemical cycles. Cross listed with ESS 2000. *Prerequisites:* a 1000-level GEOL course with a lab and concurrent enrollment in CHEM 1020. (Normally offered fall semester)

2005. Introduction to Geophysics. 4. Mechanisms and driving forces of Earth deformation, at length-scales from the tectonic to the microstructural. Introduces solid bodies, including stress and strain, rheologies and cracking, with applications to plate tectonics, deformation of rocks and surficial processes. Fluid and heat flow is introduced, with applications to tectonic and hydrologic problems. *Prerequisites:* 1000-level GEOL course with lab, MATH 1450 or higher. (Normally offered spring semester)

2010. Mineralogy. 5. Introduction to rock-forming minerals. Includes introduction to crystallography, crystal chemistry, mineral optics, and the occurrence and identification of the common minerals, with emphasis on silicates. Field trip required. *Prerequisites:* GEOL 2000 and CHEM 1020. (Normally offered spring semester)

2020. Introduction to Petrology. 4. Introduces study of igneous and metamorphic rocks in hand sample and thin section. Covers textural and mineralogical features of igneous and metamorphic rocks; chemistry of igneous rocks; phase diagrams controlling mineral crystallization in igneous and metamorphic rocks; and tectonic environments in which various igneous and metamorphic rocks are found. Field trip required. *Prerequisite:* GEOL 2010. (Normally offered fall semester)

2050. Principles of Paleontology. 3. [S3♦(none)] Examines scientific principles, biological and geological, that underlie general study of ancient life on Earth. Includes interactions of evolutionary, stratigraphic, taphonomic and paleogeographic concepts within various approaches to paleobiology and systematic paleontology. Optional field trip. *Prerequisite:* GEOL 1100 or LIFE 1000 or 1010. (Normally offered spring semester)

2070. Introduction to Oceanography. 4. [S3, G1♦(none)] Studies the form of the world ocean; circulation and currents; nutrients and organisms; origin and distribution of deep-sea sediments; and the oceanic crust. Discusses global chemical cycles and long-term controls on the global environment; effects of human activities; and law of the sea and international conventions. *Prerequisites:* GEOL 1100; CHEM 1020.

2080. General Field Geology. 3. [S3♦SE] Covers basic concepts of geology and field techniques emphasizing interpretation of geologic features in the field. Weekly field trip required. Identical to GEOL 3080. Credit not allowed if completed GEOL 4717. *Prerequisites:* GEOL 1100, 1200 or 1005. (Normally offered the first half of the fall semester)

2100. Stratigraphy and Sedimentation. 4. Introduces principles of stratigraphy, materials and processes of sedimentation. Laboratory includes study and interpretation of sedimentary rocks, sedimentary structures and stratigraphic techniques. Field trip required. *Prerequisite:* GEOL 1100. (Normally offered fall semester)

2150. Geomorphology. 4. Discusses general principles of landform description and analysis. *Prerequisite:* GEOL 1100 or equivalent.

3080. General Field Geology. 3. [S3, W3♦SE, WC] Covers basic concepts of geology and field techniques emphasizing interpretation of geologic features in the field. Weekly field trip required. Identical to GEOL 2080. Credit not allowed if completed GEOL 4717. *Prerequisites:* GEOL 1100, 1200 or 1005. (Normally offered the first half of the fall semester)

3110. Invertebrate Paleontology. 4. Encompasses taxonomy and morphology of major groups of invertebrate fossils. Includes examples of their use in correlation, environmental reconstruction and interpretation of evolution. *Prerequisite:* GEOL 1200. (Normally offered spring semester)

3400. Geologic Hazards: A Historical and Scientific Review. 4. [S3♦SE] Geologic hazards include well-known catastrophic events such as earthquakes, volcanic eruptions and landslides, as well as lesser known processes such as soil expansion, land subsidence and ground failure. Economically, the latter processes have a much greater impact each year than the more notorious geologic events. Reviews geologic hazards from a historical and scientific perspective. Describes relevant geologic processes, how geologic evidence is used to identify regions at risk, monitoring procedures and the role of the scientist in predicting catastrophic geologic

events. Prehistoric and historic events are used to illustrate temporal and spatial scales of geologic hazards. *Prerequisite:* junior standing.

3500. Global Change: A Geological Perspective. 4. [S3♦(none)] Considers the geochemical and geophysical systems that control the Earth's climate, the geological and historical record of climate change, and then discusses the possible effect that human activities will have upon these chemical and geophysical systems. *Prerequisites:* junior standing and an introductory class in the physical sciences.

3600. Earth and Mineral Resources. 4. [(none)♦SE, G] Explores the geologic formation, production, and use of Earth and mineral resources, including building materials, chemical minerals, industrial minerals and metals. For each resource, the geologic environment and processes of formation are discussed. Exploration and mining techniques for each resources are also reviewed and associated environmental problems and regulations examined. Beneficial and detrimental aspects of the use of each resource are also discussed. *Prerequisite:* completion of USP QA and L.

3650. Energy: A Geological Perspective. 4. [(none)♦SE, G] Examines the energy needs of a modern industrialized society. Looks at the types of energy, the natural laws that govern its use, transformation, and conservation. The different sources of energy available to modern societies are examined. Examination includes fossil fuels, nuclear power as well as alternative energy sources. The formation of the resource is discussed, how it is extracted, and any environmental consequences associated with its extraction and use. *Prerequisite:* completion of USP QA and L.

4000. Paleomagnetism in Geology/Geophysics. 3. Studies paleomagnetic solutions in geoscience topics. Includes plate reconstructions; sea-floor formation; structural geology; dating of structural/tectonic events; western North American tectonics; global geomagnetic polarity reversals and time scale; magnetostratigraphic correlation; stratigraphic dating; dating diagenetic events; characteristics of core and mantle; extraterrestrial impacts and geologic phenomena; environmental and climate change applications. Field trip and laboratory project required. Dual listed with GEOL 5000. *Prerequisite:* GEOL 1000 or 1100; GEOL 1200 desirable.

4001. Modeling the Earth System. 4. Takes a modeling approach to demonstrate how the Earth is integrated into an interconnected system through exchanges of energy and matter, and how Earth system functioning is susceptible to human alteration. Unifying concepts focus on quantitative interactions between the Earth and the Sun, and between the Earth's lithosphere, hydrosphere, biosphere and atmosphere. Cross listed with BOT/ATSC/ESS 4001. *Prerequisites:* MATH 2205 or equivalent and [ESS 2000 or GEOL 2000].

4050. Geology of Wyoming. 3. Survey of the geologic history of Wyoming beginning in the Precambrian and extending to the present. Stratigraphic and sedimentation history, igneous activity, metamorphism, and orogenic activity are emphasized in the lectures. Occasional field trips are required. *Prerequisite:* GEOL 1100 or an equivalent course. (Normally offered fall semester)

4060. Rocky Mountain Field Trip. 1 (Max. 3). A six-day geological field trip to various classic localities in the Rocky Mountains. *Prerequisites:* junior or senior standing and GEOL 1100 is recommended.

4113. Geological Remote Sensing. 4. Acquaints students with aircraft and spacecraft remote sensing of the environment, emphasizing geologic application to earth and other planetary bodies. Includes visible, infrared, ultraviolet, radio and radar sensing. Laboratory exercises are applications related to tectonics, geomorphology, paleoclimate, structure, stratigraphy, environmental geology and geologic hazards. Dual listed with GEOL 5113; cross listed with GEOG 4113. *Prerequisites:* GEOL 1005 or 1100 or 1200 or GEOG 1010 and MATH 1400/1405 or MATH 1450.

4125. Igneous Petrology. 2. Studies igneous rocks in thin section. Lectures cover mineralogy, geochemistry, phase equilibria and occurrence of igneous rocks. Labs study suites of igneous rocks in thin section. *Prerequisite:* GEOL 2010. (Offered fall semester of odd-numbered years)

4130. Metamorphic Petrology. 2. Studies metamorphic rocks in thin section. Lectures cover mineralogy, phase equilibria and occurrence of metamorphic rocks. Labs study suites of metamorphic rocks in thin section. *Prerequisite:* GEOL 2010. (Offered spring semester of odd-numbered years)

4150. Paleontology of Lower Vertebrates. 4. Explores evolutionary histories of lower vertebrates including fishes, amphibians, reptiles and birds. Optional field trip. *Prerequisites:* acceptable previous training in geology or zoology, 12 hours of biology and/or geology or ZOO 4000. (Normally offered every third year)

4160. Paleontology of Early Mammals. 4. Examines evolutionary histories of mammals characteristic of Mesozoic era, plus Cenozoic monotremes and marsupials, as documented through fossil record study. Optional field trip. *Prerequisites:* 12 hours of biology and/or geology, ZOO 4000. (Normally offered every third year)

4170. Paleontology of Cenozoic Placental Mammals. 4. Explores evolutionary histories of placental mammals characteristic of Cenozoic era as documented through fossil record study. Optional field trip. *Prerequisite:* 12 hours of biology and/or geology or ZOO 4000. (Normally offered every third year)

4190. Petroleum Geology. 3. Principles governing the exploration for hydrocarbons; characteristics of reservoirs and traps; origin, migration and accumulation of hydrocarbons; subsurface evaluation techniques. Dual listed with GEOL 5190. *Prerequisite:* GEOL 2005 or PETE 3000.

4200 [4010]. Topics in Geology. 1-3 (Max. 9). Studies particular geology topics in-depth at undergraduate level. *Prerequisites:* senior standing and 20 hours in geology.

4210 [4020]. Topics in Geophysics. 1-3 (Max. 9). Studies particular geophysics topics in-depth at undergraduate level. *Prerequisites:* senior standing and 20 hours in geology.

4310. Advanced Stratigraphy. 3. Deals with characterizing and predicting the vertical and lateral distribution of sedimentary rocks. Includes correlation methods; use of facies models; facies delineation; impact of tectonics and changes in relative sea level on sedimentary record; transgressions and regressions; concept and construction of stratigraphic framework; and sequence stratigraphy. *Prerequisite:* GEOL 2100. (Normally offered spring semester)

4320. Cenozoic Stratigraphy. 4. Studies areal distribution, lithogenesis, depositional environment, correlation and faunas of North America's Cenozoic deposits. Optional field trip. *Prerequisite:* GEOL 2100. (Offered based on sufficient demand and resources)

4420. Sedimentary Rocks. 4. Encompasses origin, classification and interpretation of sedimentary rocks including sandstones, mudrocks and carbonates. Topics also include diagenesis and basin analysis. Field trip required. *Prerequisites:* GEOL 2010 and GEOL 2100. (Offered every other even-numbered year)

4444. Geohydrology. 4. [M3↔(none)] Discusses principles governing occurrence, movement and extraction of water in subsurface geologic environment. One required weekend field trip in September. Dual listed with GEOL 5444. *Prerequisite:* MATH 2205. (Normally offered spring semester)

4490. Geochemistry. 3. [M3↔(none)] Discusses chemical evolution of the Earth and details of chemical thermodynamics, phase rule chemistry, equilibrium reactions and reaction kinetics as applied to geology. *Prerequisites:* GEOL 2010, CHEM 1020, MATH 2200, 2205. (Normally offered spring semester)

4500. Photogeology. 3. Studies how photointerpretation is a primary tool for field geologists. Photogeology instructs and provides practical experience in interpretation of structure, lithology, land forms and surface processes from stereographic air photos and satellite imagery. Optional field trip. *Prerequisite:* GEOL 2100. (Normally offered spring semester)

4610. Structural Geology and Tectonics. 4. Encompasses lectures, readings and problems dealing with character and causes of structures that deform Earth's crust. Field trips required. *Prerequisite:* GEOL 2010. (Normally offered fall semester)

4666. Plate Tectonics. 3. Studies theory of plate tectonics including quantitative assessment of observations which lead to its acceptance. Includes geometry of plate tectonics, plate boundaries and plate motions at present and in the past, evolution of plates including sea floor spreading and subduction processes, as well as driving mechanisms. Two lectures, one laboratory/discussion per week. Dual listed with GEOL 5666. *Prerequisites:* GEOL 4610, geology/geophysics math requirements. (Offered based on sufficient demand and resources)

4717 [5100]. Field Course in Geology. 2-6 (Max. 6). Reviews field observation of geologic phenomena, methods of geologic mapping and interpretation of data collected. Course includes a six-week field trip. *Prerequisites:* GEOL 2100, 4610. (Offered early summer)

4720 [4700]. Ore Deposits. 4. Teaches principles of economic geology of ore minerals. Lectures cover geochemistry of ore minerals and environments in which various ore minerals are found. Labs include identification of ore minerals in hand sample and under microscope and methodology of economic geology. Dual listed with 5720. *Prerequisite:* GEOL 2020. (Normally offered fall semester)

4777. Geochemistry of Natural Waters. 3. [M3↔(none)] Studies physical chemistry applied to natural waters, and chemistry of rock weathering, sources and controls on major, minor and trace elements, plus problems related to introduced pollutants. Dual listed with GEOL 5777. *Prerequisites:* GEOL 2010, MATH 2205, CHEM 1060.

4800. Independent Study. 1-3 (Max. 6). Encompasses field, laboratory or library research for senior students in department. *Prerequisites:* senior standing and not fewer than 20 hours in geology. (Offered fall, spring and summer)

4820. Capstone. 3. [W3↔WC] Critical examination of landmark papers and their influence on the Earth sciences. Through readings, lectures, discussions and in oral and written presentations, the student will gain a broad perspective over the impact of key issues in the field. *Prerequisites:* junior standing and 26 hours in the department. (Normally offered spring semester)

4835 [4970]. Applied/Exploration Geophysics. 3. Discusses the fundamentals of Applied or Exploration Geophysics, encompassing lecture, laboratory classes and discussion of case histories. It covers the Seismic Refraction, Seismic Reflection, Gravity, and Magnetics methods. Provides a solid grounding about the exploration of the Earth's subsurface for mineral and hydrocarbon resources, and environmental issues. Dual listed with GEOL 5835. *Prerequisites:* GEOL 1100, one year of physics and MATH 2210. (Normally offered spring semester)

4850. Principles of Digital Filtering and Time Series Analysis. 3. Studies principles and applications of data processing techniques as used in seismic exploration, oceanography, gravity and magnetic prospecting, remote sensing and other areas of earth science. Includes discrete versus continuous time series; fourier and Z-transforms; layer matrix analysis; reflectivity function; deconvolution and predictive deconvolution; digital filter design; array analysis; velocity filters; and migration. *Prerequisite:* mathematics through calculus. (Normally offered fall semester)

4880. Earth Surface Processes. 3. [M3↔(none)] Quantitative interpretation of Earth's surface processes. Uses a quantitative approach to demonstrate how the development of landforms can be modeled. *Prerequisites:* MATH 2205 (2210 preferred), PHYS 1210.

4888. Glaciology. 3. [M3↔(none)] Dynamics of frozen water. Covers behavior of ice masses, in the form of glaciers or ice-sheets, and geomorphic aspects of glacial erosion and deposition. Includes forcing and feedbacks between cryosphere and global climate. *Prerequisite:* MATH 2205, PHYS 1210 (1310). (Offered every second year spring semester)

4990. Gravity Prospecting. 3. Encompasses lectures and laboratory treating gravity methods applied to structural interpretation and prospecting techniques. Discusses potential field theory gravity methods and case histories. Laboratory exercises cover topics discussed and include field work to conduct gravity measurements. *Prerequisites:* GEOL 4610 and one year of calculus. (Offered based on sufficient demand and resources)

History

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Web site: www.uwyo.edu/history
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Department Chair: Michael Brose

Professors:

RONALD D. SCHULTZ, B.A. California State University—Long Beach 1971; M.A. University of California—Los Angeles 1976; Ph.D. 1985; Professor of History 1996, 1985.

Associate Professors:

ADRIAN A. BANTJES, B.A. University of Leiden, The Netherlands 1980; M.A. 1983; Ph.D. University of Texas at Austin 1991; Associate Professor of History 1997, 1991.

MICHAEL C. BROSE, B.S. Seattle Pacific University 1978; M.Sc. University of British Columbia 1985; M.A. University of Washington 1991; Ph.D. University of Pennsylvania 2000; Associate Professor of History 2006, 2000.

MARIANNE R. KAMP, B.A. Dartmouth College 1985; Ph.D. University of Chicago 1998; Associate Professor of History 2005, 2000; Director of Women's Studies 2007.

PHILIP J. ROBERTS, B.A. University of Wyoming 1973; J.D. 1977; Ph.D. University of Washington 1990; Associate Professor of History 2000, 1990.

CHERYLA A. WELLS, B.A. Queen's University, Kingston, Ontario, Canada 1995; M.A. University of South Carolina 1998; Ph.D. 2002; Associate Professor of History 2007, 2002.

Assistant Professors:

WILLIAM J. BAUER, B.A. University of Notre Dame 1998; M.A. University of Oklahoma 2000; Ph.D. 2003; Assistant Professor of History 2003.

JEFFREY D. MEANS, B.A. Grand Canyon University 1995; M.A. University of Montana 2001; Ph.D. University of Oklahoma 2007; Assistant Professor of History 2007.

DAVID MESSENGER, B.A. McGill University 1993; M.A. University of Toronto 1994; Ph.D. 2000; Assistant Professor of History 2006.

Adjunct Professors:

Campbell, Elliot, Flesher, Hosmer, Simpson

Professors Emeriti:

Cook, Dieterich, Gruenfelder, Hardy, Kohler, Moore, Williams

The Department of History offers programs leading to the degrees of Bachelor of Arts, Master of Arts, and Master of Arts for Teachers.

The study of History at the University of Wyoming provides students with the tools to comprehend the present in order to prepare for the future. Challenging courses are designed to facilitate critical thinking and the development of analytical skills. Each of our courses features the discussion of complex issues, the development of

writing and reading skills, and is generally oriented toward promoting individual enrichment. Our liberal arts undergraduate program of study encourages students to work toward a variety of career choices such as public history, archives and museum work, law, education, management, writing, government service, and graduate studies. The ability to develop perspective, render informed judgments, and function as productive citizens of the global community stand as hallmarks of our program.

Advising

The Department of History takes advising seriously. Prompt, accurate, and professional advising is a top priority at the University of Wyoming and the Department. To contact an adviser, please contact the department at djohnson@uwyo.edu or go to the web site, www.uwyo.edu (A-Z Directory, H, History, Advising) or phone (307) 766-5101. The Advising Coordinator for the department will be glad to work with you on your advising needs. Faculty advisers are assigned to all students.

Pre-Law advising is available. The American Bar Association encourages a broad base curriculum with an emphasis on critical thinking, communication, and writing skills. The department has advisers available to assist with designing a curriculum to meet pre-law students' needs.

Undergraduate Major (Effective Fall 2003)

To complete the Bachelor of Arts degree in history, the student must present at least 36 semester credit hours in history courses or approved substitutions. The courses must be taken for letter grades and a grade of C or better must be earned. Three semesters of credit in the same foreign language is required in the history major. College and university requirements must be satisfied as well, including Wyoming/U.S. Constitutional requirement that can be satisfied by completing either HIST 1211 or HIST 1221 or HIST 1251. The total hours required is 120 with 1 hour of Physical Education Credit (121 hours).

The history major has considerable leeway in course selection. Most courses taken as a freshman and sophomore are devoted to satisfying general university and the Arts & Sciences college requirements. During the first four semesters students are encouraged to take the 1000-2000 level 2003 University Studies Requirements (USP) as well as the required 12 hours of 1000-2000 level History courses. In junior and senior years, students take HIST 3020, 4030, and 15 hours of 3000-4000 History courses as well as the College of Arts & Sciences Core requirements. Three additional credit hours of history electives are required to total the 36 hours needed for the major. See below for general course suggestions; for more detail contact the department.

Because of the flexibility of the History program, history majors are encouraged to choose a minor in consultation with their academic adviser. The minor often can be embedded in the USP requirements and the A&S requirements, and usually does not require additional hours to complete. Additional History courses may not exceed 50 total hours to complete degree requirements. Students are encouraged to work closely with their assigned department adviser in preparing their schedules.

Learning Outcomes

It is the goal of the History department that our graduates have the following skills and knowledge:

- Students shall be able to demonstrate thinking skills by analyzing, synthesizing, and evaluating historical information from multiple sources.
- Students will develop the ability to distinguish between fact and fiction while understanding that there is no one historical truth.
- Students will produce well-researched written work that engages with both primary sources and the secondary literature.
- Students will develop an informed familiarity with multiple cultures.
- Students will employ a full range of techniques and methods used to gain historical knowledge.
- Students will develop an ability to convey verbally their historical knowledge.
- Students will demonstrate their understanding of cause and effect along with their knowledge of the general chronology of human experience.

Suggested B.A. Program in History

Note: USP requirements of L and D will be embedded in course choices.

Transfer Students: Please contact the Department concerning requirements.

FRESHMAN YEAR: Fall	Hrs.
HIST 1010 (I) or equivalent	3
ENGL 1010 (WA).....	3
Foreign Language.....	4
Quantitative Reasoning (QA)	3-4
HIST 1000-2000 level	3
Total Hrs.	16-17

FRESHMAN YEAR: Spring	Hrs.
HIST 1000-2000 level	3
HIST 1211, 1221, 1251 (V) or equivalent	3
Humanities (CH).....	3
Foreign language.....	4
Mathematical reasoning (QB).....	3-4
or/not both	
Laboratory science	4
Physical Activity and Health	1
Total Hrs.	17-18

SOPHOMORE YEAR: Fall	Hrs.
HIST 1000-2000 level.....	3
Global Awareness (G).....	3
Foreign language.....	4
Mathematical Reasoning (QB).....	3-4
or/not both	
Laboratory science.....	4
A&S College Non-Western.....	3
Total Hrs.	16-17

SOPHOMORE YEAR: Spring	Hrs.
HIST 1000-2000 level.....	3
Cultural Context.....	3
Cultural Context.....	3
Mathematical Reasoning (QB).....	3-4
Laboratory science.....	4
Electives.....	3
Total Hrs.	15-16

JUNIOR YEAR: Fall	Hrs.
HIST 3020.....	3
HIST 3000-4000 level.....	3
Outside of Major 3000-4000 level.....	3
Electives 3000-4000 level.....	3
Total Hrs.	15

JUNIOR YEAR: Spring	Hrs.
HIST 3000-4000 level.....	6
Outside of Major 3000-4000 level.....	3
Electives 3000-4000 level.....	6
Total Hrs.	15

SENIOR YEAR: Fall	Hrs.
HIST 3000-4000 level.....	6
HIST 4030.....	3
Outside of Major 3000-4000 level.....	3
Electives.....	3
Total Hrs.	15

SENIOR YEAR: Spring	Hrs.
History elective (3000-4000 level).....	6
Electives.....	6
Total Hrs.	12

Students who entered the History program before Fall 2003 should consult the bulletin of the year they entered the university for their requirements. If you have questions, please contact the History department.

Undergraduate Minor

The history minor must take at least 18 semester hours of history courses, 9 hours of which must be at the 3000-4000 level. These courses must be taken for letter grades with a minimum earned grade of C. For assistance in tailoring the minor content, contact the department office.

Public History Concentration

Public history designates the areas and careers that involve historical materials used for the general audience. Archives and museum management, historical preservation, historical publishing, planning and consulting on historical topics in public policy or film-making are among the fields covered by public history.

Along with its degree program, the Department of History offers a concentration in public history to students who complete the concentration requirements (18 semester hours). For further information, contact the history department. Completion of a concentration allows listing of the course of study on the student's transcript. Students should declare their intention to pursue the concentration prior to registering for the courses.

Public History Courses: Effective Spring 2003

PBH REQ1:

1. Complete HIST 2050, 4050

PBH INTERN:

2. Complete 3 hours of HIST 4400

PBH HIST PRES:

3. Complete 9 hours in the following areas:

Historic Preservation
Archives
Historical Publishing and Programming
Museums and Sites Management

Please see the department web site for a complete list of classes in PBH.

Graduate Program

For details of the M.A. or M.A.T. requirements, see the *Graduate Bulletin*.

History/Social Science Education Majors

Through a cooperative agreement with the College of Education, students can now earn concurrent majors in history and secondary education in social sciences. Interested students should inquire with the Office of Teacher Education, McWhinnie Hall, room 100.

History (HIST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1010. Introduction to History: Encounters with Difference. 3. [(none)♦I] Introduces students to history as a discipline with a focus on the ways Americans have understood and dealt with the diverse nature of a society. (Offered based on sufficient demand and resources)

1110. Western Civilization I. 3. [C1, G1♦CH] Surveys basics of Western European civilization from decline of Roman Empire to 1700. (No credit given for students who have taken HIST 2100.) (Normally offered fall semester)

1120. Western Civilization II. 3. [G1♦(none)] A broad survey of European history in the Western tradition from 1700 to present. (No credit given for students who have taken HIST 2110.) (Normally offered spring semester)

1210. United States History I. 3. [V2 or C2♦(none)] Surveys U.S. history 1607-1865. Together with HIST 1220, it is the foundation

on which all U.S. history courses offered by the department are based. Students cannot receive credit for both HIST 1210 and 1211. (Offered each semester)

1211. U.S. to 1865. 3. [V1♦V] Surveys U.S. history through the Civil War which by itself meets the requirements of the Wyoming statutes providing for instruction in the provisions and principles of the constitutions of the United States and Wyoming. Students cannot receive credit for both HIST 1210 and 1211. (Offered each semester)

1220. United States History II. 3. [C2♦(none)] Surveys U.S. history from reconstruction to recent past. Together with HIST 1210, it is the foundation for all U.S. history courses offered by the department. Students cannot receive credit for both HIST 1220 and 1221. (Offered based on sufficient demand and resources)

1221. U.S. From 1865. 3. [V1♦V] Surveys U.S. history from the Civil War to the present and meets the requirements of the Wyoming statutes providing for instruction in the provisions and principles of the constitutions of the U.S. and of Wyoming. Students cannot receive credit for both 1220 and 1221. (Offered spring semester and on sufficient demand and resources)

1250. History of Wyoming. 3. [V3♦(none)] A study of Wyoming from its beginning to the present. Students cannot receive credit for both HIST 1250 and 1251. (Offered based on sufficient demand and resources)

1251. Wyoming History. 3. [V1♦V] A survey which encourages an understanding of Wyoming history, how it relates to the history of the West and the rest of America and how it has influenced the present. An important component is to learn about the U.S. and the Wyoming constitutions and how these two documents have influenced Wyoming history. Students cannot receive credit for both HIST 1250 and 1251.

1290. History of the U.S. West. 3. [C2♦(none)] An introductory survey of the American West, with consideration of developments in both the 19th and 20th centuries. (Normally offered fall semester)

1320. World Civilization to 1450. 3. [C2, G1♦CS] A history of the world's peoples and civilizations from human prehistory to 1450, with an emphasis on the diversity and interconnectedness of human life in the past.

1330. World Civilizations from 1450. 3. [C2, G1♦G] A history of the world's peoples and civilizations from 1450 to the present, with an emphasis on the diversity and interconnectedness of human life in the past.

2020. American Military History. 3. Surveys military experiences of U.S. from colonial period to the present. In addition to specific wars, examines military doctrines and political, social and economic forces that shaped conduct of war in American history. (Normally offered spring semester)

- 2040. Imperial China. 3. [C2, G1♦CS, G]** Surveys China's social, intellectual, political, cultural, technological and ethnohistory from earliest historical period through the last imperial dynasty, and China's role in greater E. Asian and world history. Provides background for other Asia-related courses, and is part of year-long series; see HIST 2041. *Prerequisite:* 3 hours of history. (Offered based on sufficient demand and resources)
- 2041. Modern China. 3.** Surveys China's social, intellectual, political, cultural, and ethnohistory from mid-1800s to the present. Themes include colonialism, emergence of nation-state, Communist party, Mao's socio-political agenda, post-Mao reforms, and China's role in Asia. Background for other Asia-related courses, and part of year-long series; see HIST 2040. (Offered once every other year). *Prerequisite:* 3 hours in history.
- 2050. Introduction to Public History. 3.** Introduces the student to the non-teaching, professional uses of history. Topics for consideration include archival work, museum management, public information and publications, historic site development, oral history interviewing, preparation of government reports, historic preservation general concepts and historical programming. *Prerequisite:* 6 hours of history.
- 2060. Topics in History. 2-3 (Max. 6).** Discusses special topics that fall outside traditional chronological and geographical framework of history; content varies from semester to semester in accordance with faculty interest and student demand. (Offered based on sufficient demand and resources)
- 2080 [4315]. Holocaust. 3. [C2♦CH]** Surveys the destruction of European Jewry, 1933-1945. Cross listed with RELI 2080. *Prerequisite:* HIST 1120.
- 2105 Medieval Europe in Film. 3. [C3♦(none)]** Historical depictions in films help to shape people's view of the past. Uses commercial films to study major themes in the development of western European civilization between 500 and 1500. Students view, discuss and write about films, learning to evaluate films historically and to view films critically, developing media literacy.
- 2120. Ancient Greece and the Near East. 3. [C1, G1♦(none)]** Examines development of civilization in Eastern Mediterranean from prehistory to Alexander the Great. (Normally offered fall semester)
- 2130. Ancient Rome. 3. [C1, G1♦(none)]** Studies history of the growth of Roman power from city-state to world power. (Normally offered spring semester)
- 2225. History of Christianity. 3. [C1♦(none)]** Traces Christianity from its beginnings to late 20th century. Cross listed with RELI 2225.
- 2230. The History of Russia to 1855. 3. [C2, G1♦(none)]** General survey of modern Russian history from earliest times to 1855. (Normally offered fall semester)
- 2240. The History of Russia Since 1855. 3. [C2, G1♦(none)]** General survey of modern Russian history from 1855 to the present. (Normally offered spring semester)
- 2250. American Religious History I (To 1865). 3. [(none)♦CH]** Traces the history of religion in America through the Civil War. We will pay particular attention to the intertwining of religion and colonialism; the tension between emerging Protestant hegemony and religious pluralism; and the roles religion has played in justifying oppression and pursuing liberty in American history. Cross listed with RELI 2250. *Prerequisites:* None.
- 2252. American Religious History II (1865-1945). 3. [(none)♦CH]** Traces American religious history from the Civil War through WWII. Focuses on how race/ethnicity, class, gender, and national origin affected religion, and explores how Americans used religion in oppressing and liberating people; marking and erasing difference; and exporting values abroad as well as reforming society at home. Cross listed with RELI 2252. *Prerequisites:* None.
- 2290. History of North American Indians. 3. [C1♦CH, D]** Studies American Indian history through 500 years and across the continent. Considers Indian political, social and economic continuity and change. Focuses on how Indian peoples experienced and responded to times of dramatic change. Cross listed with AIST 2290. (Normally offered spring semester)
- 2320. History of Islam. 3. [(none)♦CH, G]** Focuses on the origins of Islam and its early formation, its growth and spread across the world, and its intellectual, spiritual and historical character. Time will also be spent on the formation of Islam in the modern world and how that impacts the views and actions of its members. *Prerequisites:* none.
- 2360. African-American History. 3.** Surveys African-American history in America, particularly emphasizing issues of identity, class, and progress as well as exploring African-Americans' quest for full participation in American life. Cross listed with AAST 2360. (Offered based on sufficient demand and resources)
- 2370. Chicano History: Origins to 1900. 3. [C2, G1♦CS, D]** General survey of the history of the Mexican American Chicano people in the United States. Examines the origins and development of Mexican Americans, Chicanos through the major historical processes which have shaped their experience. Major themes include multicultural, multiethnic context, origins; changing identity, comparative relations to other social, ethnic groups, culture, social structure, politics, economy, immigration, and the influence of United States-Mexico relations. Cross listed with CHST/GEORG 2370.
- 2380. Latin American Civilization. 3. [C2, G1♦(none)]** An intensive course on the 20th century. Explores relations with U.S., dependency theory, church-state relations, uses of land and other natural resources, social groups, attempts to reform society and why they have failed or succeeded. Emphasizes historical development of contemporary issues and problems. (Offered based on sufficient demand and resources)
- 2385. Chicano History : 1900 to Present. 3. [C2, G1♦(none)]** General survey of the history of the Mexican American Chicano people in the United States. Examines the origins and development of Mexican Americans, Chicanos through the major historical processes which have shaped their experience. Major themes include multicultural, multiethnic context, origins; changing identity, comparative relations to other social, ethnic groups, culture, social structure, politics, economy, immigration, and the influence of United States-Mexico relations. Cross listed with CHST 2385.
- 2460. Traditional Japan. 3. [C2, G1♦(none)]** Surveys Japan's social, intellectual, political, cultural, technological and ethnohistory from earliest historical period to the 1800s. Topics include roles of China and Korea, the samurai warrior tradition, family structure, Buddhism and Shinto. Provides background for other Asia-related courses, and is part of a year-long series; see HIST 2461. *Prerequisite:* 3 hours of history. (Offered once every other year)
- 2461. Modern Japan. 3.** Surveys Japan's social, intellectual, political, cultural, economic, technological and ethnohistory from the 1800s through the present. Topics include Japan's industrialization, Asian colonialism, post-WWII, and Japan as economic superpower. Provides background for other Asia-related courses, and is part of a year-long series; see HIST 2460. (Offered once every other year). *Prerequisite:* 3 hours in history.
- 2470. Civilization of India. 3-4 (Max. 4). [C2, G1♦(none)]** Surveys Indian civilization from earliest times, including cultural aspects. (Offered based on sufficient demand and resources)
- 2500. The Impact of the Union Pacific on Wyoming History. 3. [W2, C2♦(none)]** Students experience and interpret the impact of the building of the Union Pacific Railroad on the history and culture of Wyoming through the lens of three disciplinary perspectives. Students explore how the railroad impacted Wyoming geography, economic development and the people of the state through personal research projects. Cross listed with ECON 2500.
- 3000. Plains Culture and History. 3. [(none)♦D]** An ethnohistorical study of those Native peoples inhabiting the plains region of the U.S. from prehistory to the present. Cross listed with AIST 3000. *Prerequisite:* 3 hours of AIST courses.

3020 [4020]. Historical Methods. 3. [(none)◀L, WB] An introduction to the concepts, methods, and techniques used by historians. The main emphasis will be on methods of historical research and analysis, demonstrated through writing. Students will write a number of short papers building skills in various areas of research, analysis, and argumentation, and one longer paper reflecting individual research. Total pages for the semester: 30-45. *Prerequisites:* junior standing, 12 hours in history, and WA. (Offered based on sufficient demand and resources)

3050. Athenian Democracy. 3. Examines democratic government in ancient Athens: its origins and development, its practical workings, how politics were conducted and power was gained and exercised, citizen participation, law courts, and evaluations of democracy in the ancient world and since. Cross listed with CLAS 3050. *Prerequisite:* WB.

3110. Modern Germany. 3. A cultural, social, and political history of German-Speaking Europe from 1789 to the present. *Prerequisite:* HIST 1120. (Offered every other year)

3120. Africa Since 1800. 3. [C2, G1◀(none)] Survey of African history from the onset of the 19th century to the present day. Designed to provide an introduction to the main historical themes of the African past and an understanding of some of the main issues confronting Africa today. Cross listed with AAST 3120. *Prerequisite:* 3 hours in history.

3210. The Islamic World in the Premodern Era. 3. Surveys the rise of Islam as a religion and as a political and cultural system from the time of Muhammad (7th century) to the apogee of the Ottoman Empire (17th century). Emphasizes the spread of Islam, dynasties and empires, dissenting groups, law and philosophy. *Prerequisite:* 6 hours of history or international studies.

3220. History of the Modern Middle East. 3. Surveys the Middle East from 1700 to the present. Emphasizes the demise of the Ottoman Empire, the rise of domination by European colonial powers, transformations in political, social, religious and cultural life, the rise of nationalist movements, the influence of oil, the growth of Islamist political groups and the Israeli-Palestinian conflict. *Prerequisite:* 6 hours of history or international studies.

3710. Gender: Humanities Focus. 3. [C1◀CH] Explores how men and women are imaged differently, studying the influence of representation on gender (including representations in literature, film, art, popular culture, and/or performance). Sharpens students' ability to analyze texts and images and investigate those texts' messages about gender, sexuality, ethnicity and class. Cross listed with ENGL/WMST/ART 3710. *Prerequisite:* WMST 1080 or ENGL 1010. (Offered once a year)

4000. Indians of Wyoming. 3. [(none)◀D] Examines Native American culture in Wyoming from pre-history to the 21st century. Analyzes

social, political, and economic developments of Native peoples of Wyoming before, during, and after contact with Europeans. Discusses interaction between these diverse societies and explores the changing relationships between Indians and Euro-Americans through the periods after contact. Cross listed with AIST 4000. *Prerequisite:* 6 hours of HIST or 6 hours of AIST.

4030. Departmental Proseminar. 3 (Max. 6). [W3◀WC] For departmental majors; presented in a small group, non-lecture setting. Under close instructor supervision, students write reviews and essays, present critiques and oral reports and lead discussion on materials read by class. *Prerequisite:* advanced standing as a History major and HIST 3020; or advanced standing as History/SSSE concurrent major and either HIST 3020 or HIST 4055. (Offered based on sufficient demand and resources)

4050. Advanced Public History. 2-3 (Max. 6). Reading and practice in non-teaching professional uses of the discipline of history. Topics for consideration may include museum curatorial exercises, museum and historic site management, historical editing and publishing, programming for museums and other agencies dealing with history, site interpretation and preservation and private practice of public history. *Prerequisites:* HIST 2050, 6 hours of history courses, consent of instructor. (Offered based on sufficient demand and resources)

4055. Archival Research Methods. 3. Students will master advanced research strategies with interdisciplinary applications. Focuses on primary research and the development of advanced skills in information literacy, critical analysis of sources, verification of evidence, techniques for researching underdocumented populations, and interpretation of historical evidence. Advanced writing and oral presentation skills are emphasized. Dual listed with HIST 5055. *Prerequisite:* HIST 2050.

4060. Independent Study. 1-3 (Max. 6). Credit not to exceed 6 hours maximum, to be arranged in either European or American history. Primarily for juniors and seniors who can profit from independent work with minimal supervision. *Prerequisites:* 12 semester hours in history; written permission of instructor required. (Offered fall, spring and summer)

4075. Book History: Manuscripts. 3. Books in handwritten form are studied within their historical contexts: Mesopotamian and Indus Valley tablets; Egyptian, Greek, Roman, Jewish, Chinese, and Japanese scrolls; Early Christian, Medieval, Renaissance, Jewish, Islamic, Mayan, and Aztec codex manuscripts. Taught at the Rare Books Library, American Heritage Center, with manuscript facsimiles used as visual aides. *Prerequisites:* junior standing and 6 hours of history.

4076. Book History: Printed. 3. Printed books from their original start in China, through Gutenberg's "printing revolution" in Europe, and on up to the present are studied within their

historical contexts. All class sessions will utilize original books from the fifteenth through twenty-first centuries held at the University's Rare Books Library, American Heritage Center. *Prerequisites:* junior standing and 6 hours of history.

4077. Book History: Topics. 3 (Max. 6). An in-depth, hands-on study of books within their historical contexts. The topic will vary each time and focus on a particular theme, time period, place, or culture. Taught at the Rare Books Library, American Heritage Center, using original books or facsimiles. May be repeated once for credit. Dual listed with HIST 5077. *Prerequisites:* junior standing, 6 hours of history (preferably with at least one of the other Book History courses).

4100. Early Medieval Europe. 3. [C1, G1◀(none)] Studies development of European civilization from decline of Rome to 12th century. Dual listed with HIST 5100. *Prerequisite:* HIST 1110 or 2100. (Normally offered fall semester)

4110. The High Middle Ages. 3. [C1◀(none)] Studies history of European civilization between the 12th and 15th centuries. Dual listed with HIST 5110. *Prerequisite:* HIST 1110, 2100 or 4100.

4112. History of the Medieval City. 3. [C2◀(none)] After the fall of the Western Roman Empire, cities virtually disappeared from Western Europe. Around 1000 Europe began its rise to world prominence and cities contributed to that rise. Examines development of cities in medieval Europe and explores life within those cities. Dual listed with HIST 5112. *Prerequisite:* HIST 1110, 2100, 4100 or 4110.

4113. Medieval Religious Dissent. 3. [C1◀(none)] Religious dissent in the Middle Ages included what some would call heresy, but also encompasses such marginal groups as Jews and witches. Examines development of orthodoxy and persecution of religious diversity between eleventh and 16th centuries within the historical context of the times. Dual listed with HIST 5113. Cross listed with RELI 4113. *Prerequisite:* HIST 1110, 4100, 4110 or 2225.

4120. Europe During the Renaissance. 3. [C1◀(none)] Intensely studies European history in 14th and 15th centuries. *Prerequisite:* HIST 1110 or 2100. (Offered fall semester of even-numbered years)

4130. Europe During the Reformation. 3. [C1◀(none)] Intensely studies European history in the 16th century. *Prerequisite:* HIST 1110 or 2100. (Offered spring semester of odd-numbered years)

4140. Europe During the Age of the Baroque. 3. [C1◀(none)] Intensely studies European history in 17th century. *Prerequisite:* HIST 1110 or 2100. (Offered fall semester of odd-numbered years)

4150. Europe During the Age of the Enlightenment. 3. [C1◀(none)] Intensely studies European history in 18th century. *Prerequisite:* HIST 1120 or 2110. (Offered spring semester of even-numbered years)

4170. Europe in the Nineteenth Century. 3.

An intensive study of European history from the beginning of the nineteenth century through to the origins of the First World War in 1914. Dual listed with HIST 5170. *Prerequisite:* HIST 1120 or 2110. (Offered based on sufficient demand and resources)

4180. Europe in the 20th Century. 3. An intensive study of European history from 1890 to 1930. Dual listed with HIST 5180. *Prerequisite:* HIST 1120 or 2110. (Offered based on sufficient demand and resources)

4190. Contemporary Europe (Since 1945). 3. An intensive study of European history from 1930 to present. Dual listed with HIST 5190. *Prerequisite:* HIST 1120 or 2110 or consent of instructor. (Offered based on sufficient demand and resources)

4195. European Economic History. 3. [C2♦(none)] History of European economies from the Renaissance through the Industrial Revolution of the 19th century. Focuses on the diverging paths of different economies in Europe, the role of agriculture in economic development, and the causes and nature of the Industrial Revolution. Dual listed with HIST 5195. *Prerequisite:* HIST 1120 or 2110.

4270. France: Old Regime and Revolution. 3. [C1♦(none)] The social, political and cultural history of early modern France (1598-1789), from the rise of the Absolutist state under Louis XIV to the outbreak of the Revolution. Explores the cultural and intellectual shifts from court culture at Versailles, to the Enlightenment, to the rise of revolutionary ideologies. Dual listed with HIST 5270. *Prerequisite:* HIST 1110 or 2110.

4280. France Since 1814. 3. Encompasses the history of the political, social, economic, intellectual, ecclesiastical and military conflicts which shaped modern France. Dual listed with HIST 5280. *Prerequisite:* HIST 1120 or 2110. (Offered based on sufficient demand and resources)

4290. History of the Soviet Union. 3. Depicts Russia under Communism, including particularly the development of totalitarian dictatorship in its political, economic, social and cultural manifestations. Dual listed with HIST 5290. *Prerequisite:* HIST 1110, 1120 or HIST 2100, 2110. (Offered based on sufficient demand and resources)

4310. World War II in Europe. 3. [G1♦(none)] Covers the origins, course and consequences of one of this century's defining global developments. World War II in Europe was a transnational development which shaped the world as it is known today. Dual listed with HIST 5310. *Prerequisites:* HIST 1110 and 1120 and/or 2100 and 2110.

4315. Central Europe and the Holocaust. 3. Offers students the opportunity to learn about the history of the Holocaust through travel to various sites in Central Europe where the events themselves occurred, such as Berlin, Warsaw, Krakow and Auschwitz-Birkenau. Dual listed with HIST 5315. *Prerequisite:* HIST 1120 or 2110.

4320. Memory and National Identity in Twentieth Century Europe. 3. Europe in the twentieth century saw a century of unprecedented violence. Examines the public representation of such historical trauma through the concept of "collective memory" and focuses in particular on how memory has become a contested part of defining identity in modern-day Europe. Dual listed with HIST 5320. *Prerequisite:* HIST 1110 or 2110.

4325. Sites of Memory: Berlin and Budapest. 1. Europe in the twentieth century saw a century of unprecedented violence. This class travels to Berlin, Germany and Budapest, Hungary over Spring Break to examine how these events have been remembered in museums and memorials. Recommended for students enrolled in HIST 4320, Memory and National Identity in Twentieth Century Europe. Dual listed with HIST 5325. *Prerequisite:* consent of instructor. Additional costs for travel and accommodation.

4330. European Gender and Women's History. 3. [C2♦(none)] The experiences of women and the history of gender from the Renaissance through the 19th century. Focuses on the changing notions of the masculine and the feminine through such historical episodes as the Reformation, the Enlightenment, the French Revolution and the Industrial Revolution. Dual listed with HIST 5330. *Prerequisite:* HIST 1110 or 2110.

4335. Women and Islam. 3. Examines women's lives in Islamic societies from the seventh century to the present in the Middle East and throughout the world. Themes include women's position in Islamic law, society and culture, Western images of Muslim women, veiling and Islamist movements, theoretical readings on power, gender and agency. Cross listed with WMST 4335, dual listed with HIST 5335. *Prerequisite:* 6 hours in women's studies, international studies, religious studies, or history.

4340 [4840]. The Social History of American Women. 3. [C2♦(none)] Explores everyday life experiences of American women from the 17th century to the present. Focuses on the complex influence of gender, race and class in shaping those experiences; also, analyzes the ways in which women's dissatisfaction with their position in society formed the basis for the development of American feminism and led to the formation of an organized women's movement. Dual listed with HIST 5340. *Prerequisite:* ENGL/WMST/SOC 1080, HIST 1210/1211, 1220/1221.

4400. Internship. 1-12 (Max. 12). The internship allows students to gain hands-on experience that will help to bridge the gap between history as an academic discipline and history as practiced in museums, public history agencies and historic sites. Specific arrangements must be made in advance to identify the academic component of the internship and the grading criteria. Such planning will be done in consultation with the department's internship director. *Prerequisites:* 12 hours of history; completion of HIST

1210/1211 and 1220/1221, 1250/1251 and 4050 or advanced standing as a history major; consent of instructor.

4405. American Encounters to 1850. 3. [C2♦D] The history of America as a history of continuous encounters. Examines the history of the American people by focusing on a series of critical encounters between Native American, European, African and Asian people from pre-contact through the mid-19th century. Dual listed with HIST 5405. *Prerequisite:* HIST 1210/1211 or consent of instructor.

4406. American Encounters from 1850. 3. The history of America as a history of continuous encounters. Examines the history of the American people by focusing on a series of critical encounters between Native American, European, African, and Asian people from the mid-19th century to the present. *Prerequisite:* HIST 1210/1211.

4410. New Worlds: The Age of Discovery and Its Consequences. 3. [C2, G1♦(none)] Explores the mutual encounters between Europeans and Native Americans from the late 15th to the mid-18th centuries and the colonial worlds they created through the process of cross-cultural interchange. Dual listed with HIST 5410. *Prerequisite:* HIST 1210/1211.

4440. The Sectional Conflict. 3. Topically examines differences, north and south, which had crystallized by 1850 into competing institutions and ideologies. Includes Jacksonian party ethos, world of slavery, divisive aspects of territorial expansion and social and economic tensions which attended America's burgeoning free-market system. Dual listed with HIST 5440. *Prerequisite:* HIST 1210/1211. (Offered based on sufficient demand and resources)

4450. The Civil War and Reconstruction. 3. Studies crisis of the Union, 1861-1877. Examines experiences of both the North and South during the Civil War and restoration of the Union after the war. Dual listed with HIST 5450. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Offered based on sufficient demand and resources)

4460. Post-Civil War America: The Gilded Age. 3. Intensively covers economic, cultural and political developments which marked the U.S. in post-Civil War era, such as rise of industry, emergence of distinctive national culture and party struggles shaping America's Gilded Age. Dual listed with HIST 5460. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Offered based on sufficient demand and resources)

4462. American Indian History to 1783. 3. Surveys the history of American Indians from the period before contact to the end of the American Revolution. Examines the various contacts between American Indians and Europeans and considers what the American Revolution meant to the continent's Native peoples. Dual listed with HIST 5462; cross listed with AIST 4462. *Prerequisite:* HIST/AIST 2290.

4463. American Indian History 1783-1890. 3. Surveys the history of American Indians during the era of westward expansion. Examines the impact of American westward movement and also the manifold changes that accompanied moving west. Dual listed with HIST 5463; cross listed with AIST 4463. *Prerequisite:* HIST/AIST 2290.

4464. American Indians in the Twentieth Century. 3. Surveys the history of American Indians during the twentieth century. Examines the development of new cultural, social and political forms that help create an American Indian identity. Dual listed with HIST 5464; cross listed with AIST 4464. *Prerequisite:* HIST/AIST 2290.

4465 [4650]. Topics in American Indian History. 3. Provides topical approach to American Indian history. Through extensive readings and thorough class discussion, students build on previous course work in the field. Features best recent studies on American Indians in 19th and 20th centuries. Limited enrollment. Dual listed with HIST 5465. *Prerequisites:* HIST 2290 and consent of instructor. (Offered based on sufficient demand and resources)

4466. American Indian Ethnohistory. 3. [W3, G1♦(none)] Surveys ethnohistorical methods and concepts and provides students concrete opportunities to use these methodologies in writing exercises. American Indian ethnohistory explores Native American experiences within their own cultural contexts. Cross listed with AIST 4466. Dual listed with HIST 5466. *Prerequisite:* ANTH 2210/AIST 2210 or HIST 2290/AIST 2290.

4468. American Indians in the North American West. 3. One of the defining features of the North American West is the presence of American Indians. Through the discussion of varied readings and primary document research, the history of American Indians in the West is examined, with particular emphasis on the Great Plains and California. Cross listed with AIST 4468; dual listed with HIST 5468. *Prerequisite:* HIST/AIST 2290.

4470. The Birth of Modern America, 1890-1929. 3. [C2♦(none)] Studies political and diplomatic developments in the U.S. in the wake of industrialization and massive immigration. Some attention to cultural and social themes. Emphasizes shifting nature of reform between depression of the 1890s and that of the 1930s. Dual listed with HIST 5470. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered every third fall semester)

4475 [4670]. American Environmental History. 3. [C2♦(none)] Explores history of American attitudes and actions toward the land and natural resources. Dual listed with HIST 5475. *Prerequisite:* 6 hours of history. (Offered every fourth semester)

4480. Growth of Modern America, 1929-1960. 3. Studies political and diplomatic developments in the U.S. in Depression, World War II and early Cold War periods. Some attention to cultural and social themes. Emphasizes economic crisis, growth of government, reform traditions, anti-communism and civil rights. Dual listed with HIST 5480. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered every third semester)

4485. U.S. Latino Diaspora. 3. [G1♦(none)] Combines classroom activities and a week-long stay abroad in examining the historical creation and contemporary spread of the Latino Diaspora from the Caribbean to the Yucatan and beyond. U.S. Latina/o history, multiculturalism, pan-Latino identity, assimilation, migration trends and natives responses are stressed. Cross listed with CHST/INST 4485. *Prerequisite:* 9 hours of CHST, HIST, and/or INST related coursework.

4490. Modern America, 1960-Present. 3. [C2♦(none)] Studies political and diplomatic aspects of the U.S. since 1960. Emphasizes impact of Cold War, social and political tensions at home, civil rights and government policies. Dual listed with HIST 5490. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered every third semester)

4492. Indian Cultures of Latin America, 15th Century-Present. 3. [C2, G1♦CS, G] An ethnohistorical overview of Mesoamerican and Andean Indian cultures from the 15th century to the present. Course focuses on Native American responses to colonialism, capitalism, nationalism, and globalization. Covers recent developments, for example, the new Indian rights movement and the Chiapas rebellion in Mexico. Dual listed with HIST 5492. *Prerequisite:* 3 hours of relevant course work in HIST (e.g., 2290, 2380, 4495, 4496) or AIST (e.g., 2210, 2290, 4100, 4465) or ANTH (e.g., 2210).

4495 [4720]. Colonial Mexico/Borderlands. 3. [C2, G1♦(none)] Examines cultural, socioeconomic and political structures of colonial Mexico (1500-1850), in particular of the borderlands, today the U.S. Southwest. Key issues include ethnic relations, dependency and colonialism. Dual listed with HIST 5495. (Offered fall semester)

4496 [4800]. History of Mexico. 3. [C2, G1♦(none)] Intensive course in Mexican development. Emphasizes the 20th century especially the Mexican Revolution of 1910, showing how this nation transformed itself into a modern nation-state. Includes diplomatic relations with the U.S., incorporation of Indians, church-state relations, uses of land and other natural resources, role of the military and growth of Mexican nationalism. Cross listed with CHST 4496. Dual listed with HIST 5496. *Prerequisite:* HIST 2380. (Normally offered fall semester)

4505 [4500]. The Old South, 1820-1861. 3. Studies history of the South from emergence of southern identity to the Civil War. Emphasizes southern society and culture. Dual listed

with HIST 5505. *Prerequisite:* HIST 1210/1211. (Offered based on sufficient demand and resources)

4510 [4950]. Modern Far East: China, Japan, and India. 3. Acquaints students with efforts to modernize China, Japan and India since the late 19th century. Emphasizes interaction of these civilizations with the Western world and explains ways in which such forces as imperialism, nationalism and communism have shaped their domestic and foreign policies in 20th century. Dual listed with HIST 5510. *Prerequisite:* 6 hours of history. (Offered based on sufficient demand and resources)

4515 [4710]. American Legal History. 3. An intensive course in the history of American law, the judicial system, the legal profession and legal administration from colonial times to the present. Dual listed with HIST 5515. *Prerequisite:* HIST 1210/1211, 1220/1221 and/or consent of instructor. (Offered in spring semester of even-numbered years)

4520. U.S. Intellectual History. 3. A topical survey of ideas and intellectual movements in the U.S. since the Civil War. Emphasizes developments in this century. Analyzes work of major thinkers and theorists, formulation of ideas in such political movements as populism, progressivism and the New Deal. Includes continuing dialog between conservative and reformist elements in American society. Dual listed with HIST 5520. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Offered based on sufficient demand and resources)

4525 [4700]. American Southwest. 3. Explores the Southwest as the location of cultural encounters and conflicts. Focuses on the cross-cultural interchange between American Indians, Mexican Americans and Anglo Americans from the fifteenth century to the present. Dual listed with HIST 5525; cross listed with CHST/AIST 4525. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered spring semester)

4530 [4630]. 19th Century American West. 3. A study of the westward movement with emphasis on the trans-Mississippi West. Dual listed with HIST 5530. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered fall semester)

4535. History of Oil. 3. Intensive study of the history of oil development throughout the world. Emphasizes comparative studies of the industry as it developed in various parts of the world and during various time periods, from pre-historic times to the present. The Wyoming oil/energy mineral history is an important component. Dual listed with HIST 5535. *Prerequisite:* 6 hours in history.

4540 [4640]. 20th Century American West. 3. A study of the modern American West, with consideration of social, economic and political continuity and change. Dual listed with HIST 5540. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Normally offered spring semester)

4545. The Multicultural West. 3. Explores the American West as a meeting ground of diverse peoples and their diverse cultures. Focuses on the sustained cross-cultural interchange between Native Americans, Euro-Americans, African Americans, Latin Americans, and Asian Americans from trans-Appalachia to the Pacific Coast from the eighteenth century to the present. Dual listed with HIST 5545. *Prerequisite:* Any history or social science course.

4546. Agriculture: Rooted in Diversity. 3. [(none)◀C, D] Addresses multiple themes related to diversity in agriculture with the goal of making visible the experiences of minorities and women in agriculture. Involves significant independent research, class discussion, project development, and development of oral and written communication skills. Establishes linkages with supporting disciplines. Cross listed with AGRI/AIST/CHST/ENGL/FCSC 4546/AMST. *Prerequisites:* junior class standing or consent of instructor and concurrent enrollment or major in any of the following: ethnic studies, agriculture, American studies, anthropology, English, history, sociology, or women's studies.

4560. American Social History in the 20th Century. 3. [C2◀(none)] Explores history of social mobility and conflict in 20th century. Emphasizes impact of industrialization, rapid urbanization, massive immigration, ethnic minorities, race, religion, women and the family, painting and architecture. Dual listed with HIST 5560. *Prerequisites:* HIST 1210/1211 and 1220/1221. (Offered every fourth semester)

4582. 20th Century U.S. Foreign Relations. 3. Studies Twentieth Century United States foreign relations with a focus on the Cold War period. Examines economic sources of policy decisions, elites and mass public opinion, as well as cultural, religious, ethnic, racial, and gender issues. Cross listed with INST 4582; dual listed with HIST 5582. *Prerequisite:* HIST 1221.

4585 [4680]. Conference on U. S. History. 1-3 (Max. 6). Reading and writing course. Allows advanced students to investigate shifting ideas about important topics in 20th century American history. Primary focus varies from semester to semester, but will be designated in the class schedule. Dual listed with HIST 5585. *Prerequisite:* 6 hours of American history. (Offered based on sufficient demand and resources)

4610. Seminar Topics in the History of Wyoming I. 3. An intensive research and writing course dealing with topics in the period before statehood in 1890. *Prerequisite:* HIST 1250/1251. (Offered based on sufficient demand and resources)

4620. Seminar Topics in the History of Wyoming II. 3. Allows students to do intensive research and writing dealing with topics in Wyoming history from 1890 to present. *Prerequisite:* HIST 1250/1251. (Offered based on sufficient demand and resources)

4690. Research Topics in United States History. 1-4 (Max. 6). Provides opportunity to research selected topics in American history. *Prerequisites:* HIST 1210/1211, 1220/1221 and consent of instructor. (Offered based on sufficient demand and resources)

4990 [4080]. Topics in _____. 1-6 (Max. 12). Affords students opportunity to study in-depth various topics in history not offered in regular courses or independent study. *Prerequisite:* 6 hours of history. (Offered based on sufficient demand and resources)

International Studies

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Associate Lecturer:

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Advisory Committee:

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Yarong Ashley, international studies
Adrian Bantjes, history
Edward Bradley, agricultural and applied economics
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David Messenger, history
Susan McKay, women's studies
Deborah Paulson, geography
Linette Poyer, anthropology
Terri Rittenburg, management and marketing

Adjunct Faculty

(see department section following name for academic credentials)

Anne Alexander, economics and finance
Stephanie Anderson, political science
J. Eric Arnould, management and marketing
David Ashley, sociology
Adrian Bantjes, history
Edward B. Bradley, agriculture and applied economics
Michael Brose, history
Winberg Chai, political science
Roger Coupal, agriculture and applied economics
Lydia Dambekalns, secondary education
Francois Dickman, Emeritus, U.S. Ambassador
Rodney Garnett, music

Patricia Hamel, Spanish
Larry Hubbell, political science
Marianne Kamp, history
Timothy Kearley, law
Quee-Young Kim, sociology
Joseph Krafczik, Russian
Susan McKay, women's studies
David Messenger, history
Deborah D. Paulson, geography
Linette A. Poyer, anthropology
Jeanette Reisenburg, international studies
Terri L. Rittenburg, management and marketing
Amy Roberts, elementary and early childhood education
Stephen C. Ropp, political science
Mona Schatz, social work
Richard J. Schmidt, civil and architectural engineering
Audrey Shalinsky, anthropology
Ed Sherline, philosophy
Sarah Strauss, anthropology
Gerald Webster, geography
Bonnie Zare, women's studies

Undergraduate International Studies Curriculum

A degree in international studies allows students to study regions of the world and international topics from several different disciplinary perspectives. Students who major in international studies take a total of 37 hours of international studies coursework, plus 18 hours of a single foreign language (not including American Sign Language), with one language course at the 3000-level. The coursework in international studies is distributed across several categories: foundations, systems, concentration and electives.

Majors are required to take INST 1010 (proseminar) prior to their final year and INST 4950 (capstone) their final year.

Students majoring in international studies complete six hours in each of two **core areas**:

- 1) Lower Division: Foundations
- 2) Upper Division: International Systems

Students take a minimum of 15 hours of course work in one concentration. Concentrations include international development and the global environment, global economic systems, international cultural and social issues, and regional concentrations in Africa and the Middle East, Asia and the Pacific Rim, Europe and the former Soviet Union, and Latin America.

Students take six hours of elective courses from the program course guide. A course cannot simultaneously fulfill more than one requirement as a core area, concentration and elective course.

Courses not listed on the program guide may be accepted to fulfill degree requirements, based on a successful petition by the student to

the director of the program. These may be topical seminars or occasionally offered courses appropriate to international studies.

Students are encouraged to study or do an internship abroad. Opportunities are listed on the international studies website (www.uwyo.edu/inst).

Many international studies courses require prerequisites. Students are advised to take prerequisites that simultaneously satisfy University Studies Program requirements. Students are advised to satisfy the QB University Studies Program requirement by taking STAT 2070, Introductory Statistics for the Social Sciences.

All courses required for the major must be completed with a grade of C or better.

Core Courses

Lower Division: Foundations

ANTH	1200	Intro to Cultural Anthropology
HIST	1120	Western Civilization II
INST	1050	Global Economic Issues
INST	1060	World Regional Geography
INST	1200	Non-West. Political Cultures
INST	2100	Social Change
INST	2300	World Politics- Post-Cold War Era
INST	2310	Intro. to Int'l Relations
SOC	2100	Social Change

Upper Division: International Systems

ANTH	4320	Political Anthropology
INST	4300	World System
INST	4330	American Foreign Relations
INST	4340	International Organizations
INST	4350	Culture Change
INST	4582	20C U.S. Foreign Relations
LAW	6720	International Law
PHIL	3250	Global Justice
POLS	3300	Model UN
POLS	4870	Seminar in International Relations
POLS	4890	Seminar in Comparative Government and Politics
POLS	4900	Seminar in International Relations Theory
POLS	4910	Seminar in Comparative Foreign Policy Analysis

Minors

Students can minor in international studies by fulfilling one of the following sets of requirements:

1. Twenty-seven hours of coursework including at least 12 hours in a foreign language, 15 hours of international studies curriculum, with a minimum of 9 hours at the 3000-level or above.
2. Asian Studies Minor—a minimum of 27 credit hours, which includes 12 hours in an Asian language and 9 hours of upper-division coursework. For detailed requirements, see www.uwyo.edu/intstudy/undergrad/asianminor.asp.

3. European Studies Minor—a minimum of 30 credit hours, which includes 12 hours in a single modern European language other than English, and 9 hours of upper division coursework. For detailed requirements, see www.uwyo.edu/intstudy/undergrad/europeanstudiesminor.asp.

Graduate Program

International Studies offers an interdisciplinary program leading to the degree of Master of Arts, including a Master's International - Peace Corps option and dual major in environment and natural resources. For further information, please consult the *Graduate Bulletin* or the international studies web site (www.uwyo.edu/intstudy).

International Studies (INST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Global Economic Issues. 3. [C2, G1↔CS, G] Introduction to basic principles of economics through the examination of contemporary global economic problems. Issues include sustainable development, economic causes of wars, global energy dependence, patterns of international capital flows, foreign aid, the brain drain and the emerging global business community. Topics selected define the set and level of economic principles introduced. Cross listed with ECON 1000.

1010. Proseminar in International Studies I. 1. [(none)↔I, L] An introduction to the University as a social institution, international studies, and the International Studies Program. Students are introduced to international studies faculty and students. Emphasis is on topics, approaches, issues and problems falling within the purview of international studies. Offered S/U only.

1020. Proseminar in International Studies II. 1. Introduces students to international studies and the International Studies Program. International information and critical information skills are introduced. Topics, approaches, issues and problems falling within the purview of international studies are examined. Careers in international studies, internships, and preparation for study abroad are covered. Offered S/U only.

1060. World Regional Geography. 3. [(none)↔CS, G] Covers the distributions, traits and processes of the Earth's peoples and landscapes through the perspective of regional geography, which is the study of the spatial relationships of natural environments and human societies. Identical to GEOG 1000.

1200. Non-Western Political Cultures. 3. [C2, G1↔CS, G] Gives students appreciation of non-western political cultures and how these cultures have created different political institutions and practices. Consists of three case studies of

non-western nations selected from China, India, Japan, Saudi Arabia, Tanzania and Russia. Cross listed with POLS 1200. (Offered each semester)

2000. Introduction to International Business. 3. [G1↔G] A broad survey of the field of international business which introduces basic concepts of international business activity and theory and reviews major foreign environmental forces--financial, economic and socioeconomic, physical, sociocultural, political, legal, labor, competitive and distributive--within the context of strategic management issues. Cross listed with BUSN 2000. *Prerequisite:* ECON 1010.

2100. Social Change. 3. [C2, G1, W2↔WB, G] Studies causes, processes and consequences of structural transformations in historical and comparative perspective. Reviews and assesses forces that account for sociological changes. Explores social change globally as well as in the U.S. Cross listed with SOC 2100. *Prerequisite:* SOC 1000.

2200. Study Abroad Preparation. 1. Prepares students for long-term study in a foreign country. Helps students adapt to and understand the host country: culture, history, geography, political and economic context. Students become familiar with practical information needed for a foreign experience, principles of culture shock, ethnocentrism, cultural relativism, and fundamentals of cross-cultural communication. Offered S/U only. Identical to INST 5000.

2260. Foreign Locale. 3-6 (Max. 9). A UW course taught primarily or entirely in a foreign locale. *Prerequisites:* none.

2990. Topics in International Studies. 1-6 (Max. 15). Accommodates seminar series and/or course offerings including those by interdisciplinary teams and visiting faculty in international studies not covered by department courses. *Prerequisite:* WA

2300. World Politics in the Post-Cold War Era. 3. [G1↔(none)] Examines changes that have taken place since the end of the Cold War in perspectives of major world powers, global and regional power balances, patterns of conflict and cooperation and the structure of the world system. Focuses on what these changes portend for the future. Cross listed with POLS 2300. (Offered fall semester)

2310. Introduction to International Relations. 3. [W2↔G] Analyzes nature of international relations, emphasizing various methods of explaining and interpreting international behavior of nation-states. Illustrates contemporary problems of world politics. Cross listed with POLS 2310. (Normally offered once a year)

3100. Chinese Society. 3. [C2, G1↔G] Reviews origins and consequences of Chinese revolution in comparative and cultural perspectives. Discusses influence of historical traditions and social structure on individual lives and behavioral patterns. Cross listed with SOC 3100. *Prerequisite:* SOC 1000.

- 3400. Politics and Society of Turkey. 3. [(none)◀G]** Examines the history of Turkey with an emphasis on its relationship with the Western world. Major topics include the Ottoman Empire; Ataturk and the founding of the Republic of Turkey; Turkey's role in the Cold War; Kurdish and other minority populations; the changing Turkish political landscape; the evolution of Islamist politics; and recent relations with the United States and European Union. *Prerequisite:* WA.
- 3420. The Anthropology of Global Issues. 3.** Using anthropology's long-term, holistic and comparative approaches, the course examines key global issues, e.g., poverty, war, disease, environmental degradation, and terrorism from an anthropological perspective. Cross listed with ANTH 3420. *Prerequisite:* ANTH 1200.
- 3860. Economics of World Food and Agriculture. 3. [C2, G1▶G]** Explores global food and agricultural issues with a focus on hunger, chronic malnutrition, and diets of people in developing countries. Introduces basic economic concepts pertinent to understanding and analyzing global food markets and prices and to evaluating government policies designed to reduce food insecurity, enhance diets, and promote agricultural development. Cross listed with AGECE 3860. *Prerequisite:* An economics principles course. (Normally offered spring semester)
- 4100. Global Public Health. 3. [(none)▶G].** Introduces students to the global context of public health, to principles underlying global health, and to dimensions of public health particular to international settings. It examines major themes and policies in global health and analyzes health problems and varying responses to them in different parts of the world. Dual listed with INST 5100; cross listed with HLSC 4100. *Prerequisite:* upper division student status.
- 4110. Sociology of International Development. 3 [C2, G1, W3▶WC, G]** Surveys development studies and rural change, including case studies of deliberate change efforts toward industrialization. Includes peasant modes of food production, daily life in subsistence, agriculture, shifts to commercial agriculture and global economy, ethical and critical issues of induced change and different approaches to development process and outcomes. *Prerequisite:* SOC 1000 or ANTH 1200; SOC 2100 recommended. (Offered once a year).
- 4155 [4920]. Women, War and Health. 3. [C2, G1▶CS, G]** Focuses on the physical and psychological health of women and children as influenced by armed conflict. Examines the psychosocial, public health, and socioeconomic effects of living in contemporary war zones or conditions of threatened war. Key international documents that address effects upon women and children are discussed in order to evaluate feminist initiatives to prevent and mediate the consequences of war. Cross listed with WMST/NURS 4155. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)
- 4175 [4940]. Gender, Women, and Health. 3. [G1, C2▶CS, G]** Focuses on issues of gender, women and health, including the effects of gender bias in medical research and health care practices and policies. Health care issues of specific concern to women, both nationally and internationally will be examined. Cross listed with WMST/NURS 4175. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)
- 4200. China and Globalization. 3.** The economic reforms in China have been political, cultural, and above all, global processes. Understanding these processes of economic reform tells us much about the role of government, culture, and globalization in the transition from socialism to capitalism. It also tells us a great deal about China's future role in the international community of nations. *Prerequisite:* POLS 1200 or HIST 2041 or SOC 3100.
- 4250. Economic Development in Asia. 3. [(none)▶G].** Designed to explore key issues to the historical development of Asian countries from both comparative and international political economy perspectives. Distinctive political, social, and economic characteristics of these nations will be analyzed. Dual listed with INST 5250. *Prerequisite:* 9 hours of international studies of Asian-focused courses.
- 4290. Inter-American Relations. 3. [G1▶(none)]** Surveys inter-American system and idea of hemispheric unity. Analyzes major issues confronting inter-American community. Cross listed with POLS 4290. *Prerequisite:* 9 hours of political science including POLS 2310. (Normally offered every other year)
- 4300. The World System. 3. [G1▶(none)]** Analyzes the structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Cross listed with POLS 4300 and SOC 4300. *Prerequisite:* SOC 1000, ANTH 1100 or equivalent social science course. (Offered based on sufficient demand and resources)
- 4330. American Foreign Relations. 3.** Analyzes American foreign policy decision-making process and selected contemporary foreign policy problems. Stresses political and institutional factors, along with analysis of policy options. Cross listed with POLS 4330. *Prerequisite:* 9 hours of political science including POLS 2310. (Normally offered once a year)
- 4340. International Organizations. 3.** Encompasses development of world organizations, such as League of Nations, United Nations and its affiliate bodies. Also studies regional organizations and private international bodies. Cross listed with POLS 4340. *Prerequisite:* 9 hours of political science including POLS 2310.
- 4350. Culture Change. 3.** Examines representative theories of change, factors involved, dynamics of modernization and applied anthropology. Identical to ANTH 4340. *Prerequisite:* ANTH 1200.
- 4370. Global Political Economy. 3. [(none)▶G]** Examines the interaction of politics and the economy at the global level. Evaluates how political and economic decisions of one country or groups of countries affect institutions and life circumstances in others. Assesses the causes of consequences of globalization as rooted in political economy. Cross listed with SOC 4370. *Prerequisites:* SOC 1000 and junior standing or SOC 2100.
- 4485. U.S. Latino Diaspora. 3. [G1▶(none)]** Combines classroom activities and a week-long stay abroad in examining the historical creation and contemporary spread of the Latino Diaspora from the Caribbean to the Yucatan and beyond. U.S. Latina/o history, multiculturalism, pan-Latino identity, assimilation, migration trends and natives responses are stressed. Cross listed with HIST/CHST 4485. *Prerequisite:* 9 hours of CHST, HIST, and/or INST related coursework.
- 4540. International Marketing. 3. [G1, W3▶(none)]** Approaches the topic of international marketing from a managerial perspective. Exposure to world environmental characteristics and interdependencies, as well as objectives, strategies and tactics of marketing goods and services to various countries and cultures. Cross listed with MKT 4540. *Prerequisite:* MKT 3210.
- 4582. 20th Century U.S. Foreign Relations. 3.** Studies Twentieth Century United States foreign relations with a focus on the Cold War period. Examines economic sources of policy decisions, elites and mass public opinion, as well as cultural, religious, ethnic, racial, and gender issues. Cross listed with HIST 4582; dual listed with INST 5582. *Prerequisite:* HIST 1221.
- 4600. Global Population Issues. 3. [G1, M3▶(none)]** Analyzes U.S. and world populations, emphasizing implications of population trends. Cross listed with SOC 4600. *Prerequisites:* SOC 1000 or equivalent and SOC 2070 or STAT 2070 or equivalent. (Normally offered once a year)
- 4680. Shanghai: Past & Present. 3. [(none)▶CS, G]** Lectures, fieldtrips, and other cultural activities are all incorporated into the curriculum to help students learn about the political, economic and cultural development in 21st century China. Cross listed with SOC 4680. *Prerequisites:* none.
- 4710. Comparative Systems. 3. [G1▶(none)]** The study of the origins and characteristics of modern economic systems; similarities and differences in the systems of the U.S., Great Britain, Soviet Union, Germany, India and China. Cross listed with ECON 4710. *Prerequisites:* ECON 3010; QA. (Offered based on sufficient demand and resources)

4950. Capstone in International Studies. 3. [(none)♦WC] Integrative course taught by an international studies faculty member. Students analyze in depth a topic from one of a variety of international studies approaches, organizing their research in concert with others in the class. Emphasis is on the quality of research and presentation. *Prerequisite:* senior standing in international studies.

4970. Internship in International Studies. 1-6 (Max. 15). Integrates practical international experience with academic knowledge. Students are expected to participate in specifically assigned tasks and observe broader activities of sponsoring organization, and reflect on experience in written assignments. Satisfactory/unsatisfactory only. Dual listed with INST 5970. Available for S/U grading only. *Prerequisites:* 9 hours of international studies courses and consent of instructor.

4975. Readings in International Studies. 1-3 (Max. 6). Outlines special programs of readings in international studies to meet the needs of individual students. Available for S/U only. *Prerequisite:* 9 hours of international studies courses.

4990. Topics: _____ 1-6 (Max. 15). Accommodates seminar series and/or course offerings including those by interdisciplinary teams and visiting faculty in international studies not covered by departmental courses. Dual listed with INST 5990. *Prerequisites:* junior standing and consent of instructor.

Languages— Modern and Classical

231 Hoyt Hall, 766-4180

FAX: (307) 766-2727

Web site: www.uwyo.edu/modlang

Department Chair: Philip Holt

Professors:

PHILIP HOLT, B.A. St. John's College 1969; Ph.D. Stanford University 1976; Professor of Classics 2005, 1993, 1987.

KEVIN S. LARSEN, B.A. Brigham Young University 1976; M.A. 1978; A.M. Harvard University 1979; Ph.D. 1983; Professor of Spanish 1998, 1989.

CARLOS MELLIZO-CUADRADO, B.A. University of Madrid 1965; M.A. 1966; Ph.D. 1970; Professor of Spanish 1977, 1968.

HANNELORE MUNDT, Staatsexamen, Rheinisch-Westfälische Technische Hochschule Aachen 1977; Ph.D. University of California-Irvine 1984; Professor of German 2004, 1998, 1996.

PAVEL SIGALOV, Diploma, Pedagogical Institute (U.S.S.R.) 1952; Ph.D. Leningrad University 1963; Doctor of Philology, 1978; Professor of Russian 1991, 1983.

Associate Professors:

PATRICIA HAMEL, B.A. Pennsylvania State University 1964; M.A. 1968; Ph.D. University of Kansas 1985; Associate Professor of Spanish 1995, 1989.

HAROLD P. NEEMANN, B.A. Metropolitan State College 1990; M.A. University of Colorado at Boulder 1992; Ph.D. 1998; Associate Professor of French 2004, 1998.

DUANE RHOADES, B.A. Brigham Young University 1967; M.A. 1971; Ph.D. University of Illinois 1977; Associate Professor of Spanish 1988, 1982.

KHAMA-BASSILITOLO, G3: Gradué en Pédagogie Appliquée, Option: Français-Linguistique Africaine, Université Nationale du Zaïre 1976; L2: Licencié en Pédagogie Appliquée, Option: Français, 1978; M.A. Vanderbilt University 1986; Ph.D. 1989; Associate Professor of French 1996, 1990.

Assistant Professors:

EMILY HIND, B.A. University of Kansas 1995; M.A. Pennsylvania State University 1997; Ph.D. University of Virginia 2001; Assistant Professor of Spanish 2005.

HERVÉ G. PICHERIT, B.A. University of Wyoming 2000; M.A. Standard University 2003; Ph.D. 2008; Assistant Professor of French 2008.

Temporary Assistant Professor:

MASAHIRO YAMAMOTO, B.A. University of Hokkaido, Japan 1983; Ph.D. University of Alabama 1998; Temporary Assistant Professor of Japanese 2003.

Senior Professional Lecturer:

JOSEPH KRAFCHIK, B.A. University of Wyoming 1983; M.A. University of Michigan 1986; Senior Professional Lecturer in Russian 2005, 1988.

Academic Professional Lecturers:

SARAH CARLE, B.A. Chadron State College 2002; M.A. University of Wyoming 2005; Academic Professional Lecturer in Spanish 2007.

LAURA DE LOZIER, B.A. Beloit College 1990; M.A. University of Wisconsin 1992; Ph.D. 2002; Academic Professional Lecturer in Latin 2006.

MARK W. PERSON, B.A. University of Wyoming 1983; M.A. 1986; Academic Professional Lecturer in German 2008.

YAN ZHANG, B.A. Harbin Institute of Technology 2000; M.A. Heilongjiang Provincial Academy of Social Sciences 2002; Academic Professional Lecturer in Chinese 2006.

Temporary Lecturers:

Petra Heinz, Pamela Heuschkel, Jennifer Lavanchy, Carlos Salas, Walter Wall

Professors Emeriti:

M. Ian Adams, Lewis Bagby, Lowell A. Bangerter, Klaus D. Hanson, Francis S. Heck, Walter G. Langlois, Sigrid Mayer, Marguerite P. van Doorslaer, Jean-Louis G. Picherit

The Modern and Classical Languages department offers work leading to the B.A. degree with majors in French, German, Russian and Spanish, or concentrations for the B.A. in humanities/fine arts. A minor is offered in Latin and Japanese area studies. The M.A. is available in French, German and Spanish. Courses are also offered in literature in translation.

Foreign Language Requirements

All candidates for the B.A. and B.S. degree in the College of Arts and Sciences are required to complete the equivalent of 8 semester hours of work in a single modern or classical language. Normally this requirement is satisfied by completing courses 1010 and 1020 with a letter grade of C or better in a single language, but completion of 1020 with a grade of C or better also satisfies the requirement. There are also other ways to satisfy the requirement: (1) a more advanced language course with a grade of C or better also constitutes the completion of the language requirement (for a list of applicable courses contact the department); (2) students with prior exposure to the language may be granted college credit after taking a written examination administered by the department; students must take this examination before completing registration for a language course (for regulations governing credit by examination, refer to Credit Available to Undergraduate Students in this bulletin); (3) an advanced placement, AP, examination in the language with a score of 4 or higher satisfies the language requirement, as do CLEP scores (see section on Credit by Examination on the department web site).

Students who do not wish college credit for previous high school language study should register in classes appropriate to their level of training. Those who have had two years of a foreign language in high school normally enter 1020 of that language, while those who have had three or more years of such study should take the placement examination to determine the course in which they should enroll and to avail themselves of the opportunity to receive credit by examination. Students in doubt about their ability are advised to take the placement examination. Students who have completed their language requirement can enroll for additional language courses of their choice, something strongly advised for those who wish to reach adequate levels of proficiency in the language or wish to study abroad. Check the bulletin or web site for special sections targeted for students with varied experiences in the language.

Undergraduate Major

A language major usually requires 30 semester hours of work in a single language beyond 2030. To include a language option in the humanities/fine arts interdisciplinary program, students must complete at least 12 hours above the 2030 level.

Required courses for the major in French are 2040, 2130 or 3110, 2140, 3005, 3050, 3060, 4100, 4110, plus 6 hours of electives at the 4000-level.

In addition to the courses listed above, 6 hours of the required courses for the major in French must be taken in residency. Students select 2 from the following courses: FREN 4120, 4130, 4140, 4250, 4260, 4350.

Required courses for the major in German are 2040, 2140, 3050, 4100 and 4110, plus 15 hours of electives in German at the upper-level.

German in-residency requirement: German majors need to take 3 of the following 6 courses to meet the in-residency requirement: GERM 4100, 4110, 4145, 4240, 4230, 4265.

Required courses for the major in Russian are RUSS 2040, 2140, 3050, 3060, 4070, 4080 and 12 hours of electives in Russian at the 3000-level or above.

Spanish offers two major tracks: (1) literature-language requires 2040, 2140, 3050, 3100, 3120, plus electives (for a total of 30 credit hours minimum); (2) language-linguistics requires 2040, 2140, 3050, 3060, 4070, 4080, 4090, LANG 4750 and strongly recommends SPAN 3100, 3120, ANTH 2200, plus electives (for a total of 33 credit hours minimum).

The humanities/fine art majors should have 2040, 2140 and 3050 as part of their language option.

Prospective B.A. language majors should seek help from their advisers to work out a coordinated program of study. An additional area of concentration (e.g., a second foreign language, English, fine arts, philosophy, history, science or social science) is strongly recommended.

Minor

In general, students desiring to complete a minor in a foreign language will be required to complete a program of 18 semester hours above 2030. For individual languages, contact the department for further details or check the departmental web site.

Teaching Certification

For those wishing to pursue teaching certification, a concurrent major in Modern Language Education is also available. For details, contact the Department of Secondary Education.

Native Language Credit

Students are not allowed university credit for language courses in their native language below the 4000 level.

Graduate Degrees

The department offers the M.A. in French, German and Spanish under Plan A and Plan B. Consult the *Graduate Bulletin* for the general regulations concerning graduate work at the University of Wyoming.

Undergraduates contemplating advanced work in all fields should remember that many graduate schools require a reading knowledge of at least one foreign language for admission to candidacy for an advanced degree. Accordingly, they should plan to begin study in a foreign language early in their undergraduate years so that their progress toward an advanced degree will not be delayed later.

Suggested Curriculum for B.A. in a Foreign Language

(for students with no prior background in the language)

FRESHMAN YEAR: Fall	Hrs.
Language 1010	4
FRESHMAN YEAR: Spring	Hrs.
Language 1020	4
SOPHOMORE YEAR: Fall	Hrs.
Language 2030	4
SOPHOMORE YEAR: Spring	Hrs.
Language 2040	3
Language 2140	3
JUNIOR YEAR: Fall	Hrs.
Language 3050	3
Language 3000-4000-level.....	3
JUNIOR YEAR: Spring	Hrs.
Language 3060	3
Language 3000-4000-level.....	6
SENIOR YEAR: Fall	Hrs.
Language 4000-5000-level.....	6
SENIOR YEAR: Spring	Hrs.
Language 4000-5000-level.....	6

Classics (CLAS)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2020. Classical Greek Civilization. 3. [C1, G1, W2↔C, WB] Examines some of the most important developments of ancient Greek culture. Includes development of government in the city-states, with particular attention to Athenian democracy; tragedies of Aeschylus, Sophocles and Euripides; comedies of Aristophanes; crisis of values of the Peloponnesian War; and philosophy of Plato. *Prerequisite:* WA. (Normally offered fall semester)

2040. Classical Roman Civilization. 3. [(none)↔CH, WB] Examines some of the most interesting political, legal, artistic, literary, and engineering developments of the Republic and Principate (510 BC-AD 212). These include representational government, citizens' rights, sanctioned violence, Rome's infrastructure, and

major literary works of oratory, comedy, history, epic, and philosophy. *Prerequisite:* WA or equivalent (as specified in USP requirements). (Offered spring semester)

3050. Athenian Democracy. 3. Examines democratic government in ancient Athens: its origins and development, its practical workings, how politics were conducted and power was gained and exercised, citizen participation, law courts, and evaluations of democracy in the ancient world and since. Cross listed with HIST/POLS 3050. *Prerequisite:* WB.

4230. Greek Tragedy. 3. Reading and discussion of major plays by Aeschylus, Sophocles, and Euripides, together with examination of the performance and social context of Greek drama, its use of traditional myths, and selected issues in contemporary scholarship on the tragedies. Cross listed with ENGL/THEA 4230. *Prerequisite:* 3 hours of classics courses. (Offered in spring in alternate years)

4270. Classical Epic Poetry. 3. Reading and discussion of major works of Greek and Latin epic poetry, centered on Homer and Vergil. Also includes consideration of the background of these works (both mythological and historical) and the development of the epic tradition in the ancient world. Cross listed with ENGL 4270. *Prerequisite:* completion of a USP WB course.

4975. Independent Study. 1-4 (max. 12) Specialized study in aspects of Greek or Roman civilization of interest to the student, with topic and plan of work to be worked out by the student and the instructor together. *Prerequisite:* 6 hours of Classics courses or consent of instructor. (Offered based on sufficient demand and resources)

4990. Topics in Classical Civilization. 1-4 (max. 12) Study in depth of special areas in ancient civilization that are not covered in regularly offered courses. *Prerequisite:* 6 hours of Classics courses or consent of the instructor. (Offered based on sufficient demand and resources)

Chinese (CHIN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1010. First Year Chinese I. 4. Fundamentals of grammar, conversation, and reading. Introduction to Chinese culture through the language.

1020. First Year Chinese II. 4. Fundamentals of grammar, conversation, and reading. Introduction to Chinese culture through the language. *Prerequisite:* CHIN 1010 or equivalent.

2030. Second Year Chinese I. 4. Grammar, composition, conversation and more vocabulary in Chinese. *Prerequisite:* CHIN 1020 or equivalent.

2040. Second Year Chinese II. 3. Further studies in grammar composition, conversation and more vocabulary in Chinese. *Prerequisite:* CHIN 2030 or equivalent.

3055. Business Chinese. 3. [(none)↔G] Stresses improvement of speaking and writing skills with regard to Chinese business affairs. Emphasis on business related texts and speech used in China. *Prerequisite:* CHIN 2040.

French (FREN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1010. First Year French I. 4. Fundamentals of grammar, composition, conversation and reading. (Offered both semesters)

1020. First Year French II. 4. Fundamentals of grammar, composition, conversation and reading. *Prerequisite:* FREN 1010 or two years of high school French. (Offered both semesters)

2030. Second Year French I. 4. Emphasizes the development of communication skills (listening, speaking, reading and writing) so as to help students function effectively in real-life contexts. Provides a systematic review of grammatical structures necessary for successfully communicating in French. *Prerequisite:* FREN 1020 or three years of high school French. (Offered both semesters)

2040. Second Year French II. 3. A course stressing the usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* FREN 2030, three years of high school French or FREN 1010, 1020 with grade of B or better. (Offered fall semester)

2130. Contemporary French Culture. 3. Designed as an introduction to contemporary French culture. It gives students an in-depth insight into contemporary French life. It also deals with issues affecting the French-speaking world in general: Quebec, Africa, New Caledonia, Switzerland, Monaco, etc. *Prerequisite:* FREN 1020 or equivalent. (Offered fall semester)

2140. Introduction to Reading. 3. [(none)↔CH, G] Introduction to the literature of France; analysis of major literary types and elements of criticism. *Prerequisite:* FREN 2030. (Offered spring semester)

3005. French Phonetics and Pronunciation. 3. Focus on the phonetic structures of French through systematic pronunciation drills and phonetic transcriptions. Varied oral activities and exercises will help develop an awareness of spoken French and improve students' pronunciation. *Prerequisite:* FREN 2040 or equivalent. (Offered fall semester)

3050. Third Year French I. 3. [W2↔WB] A course stressing the usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* FREN 2040. (Offered spring semester)

3060. Third Year French II. 3. [W2↔(none)] A course stressing the usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* FREN 3050. (Offered fall semester)

3105. Masterpieces of French Literature in Translations. 3. [C1, G1↔(none)] A study in English of representative works of French literature from the Middle Ages to the present. No credit for French majors. *Prerequisite:* ENGL 1020. (Offered based on sufficient demand and resources)

3110. Contemporary French Civilization. 3. Emphasizes the institution and values of contemporary France. Deals with the major political, social, cultural and economic aspects of today's France. Will be taught in French. *Prerequisite:* FREN 3050.

3990. Independent Study. 1-4 (Max. 4). Books or periodicals of special interest to the student, selected in consultation with a member of the staff; independent reading and reports. *Prerequisite:* FREN 2030. (Offered both semesters)

4080. Studies in the French Language. 3 (Max. 9). The topics explored under this general heading include: translation, history of the French language, French of the media and conversation. Dual listed with FREN 5080. *Prerequisite:* FREN 3060. (Offered both semesters)

4085. Studies in French Culture. 3. Multiple topic course: (a) Business French focusing on the socio-economic, linguistic and administrative aspects of doing business in French; (b) Explication de textes, providing a systematic introduction to textual analysis; taught alternately. Dual listed with FREN 5085. *Prerequisite:* FREN 3060.

4100. A Survey of French Literature I. 3. [C1, G1↔(none)] A study of French Literature and civilization from the Middle Ages through the 18th century. *Prerequisite:* FREN 2140 or equivalent. (Offered fall semester)

4110. A Survey of French Literature II. 3. [C1, G1↔(none)] A study of French Literature and civilization from the 19th century to the present. *Prerequisite:* FREN 2140 or equivalent. (Offered spring semester)

4120. Medieval French Literature. 3. [C1, G1, W3↔(none)] A survey of medieval French literature: epic, courtly poetry, Arthurian romance, theatre and the poetry of Villon. Dual listed with FREN 5120. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended. (Offered every third year)

4130. Renaissance French Literature. 3. [C1↔(none)] A study of the new spirit after the Middle Ages. Authors studied: Rabelais, the poets of the Pleiade, Montaigne and others. Dual listed with FREN 5130. *Prerequisite:* FREN 3050; FREN 4100 and 4110 strongly recommended. (Offered every third year)

4140. 17th Century French Literature. 3. [C1, W3↔WC] A survey of representative works from the major literary genres from the formative period to classicism and its aftermath. Dual listed with FREN 5140. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended. (Offered every other year)

4250 [4150]. 19th Century French Literature. 3. Development of romanticism from Rousseau on with excerpts from Chateaubriand and romantic poets like Hugo and Vigny. The period of realism-naturalism focuses on novels of Flaubert and Zola, while the symbolist school of poetry is represented by Baudelaire, Verlaine and Rimbaud. Dual listed with FREN 5250. *Prerequisites:* FREN 3050; FREN 4100 and 4110 strongly recommended. (Offered every other year)

4260 [4160]. 20th Century French Literature. 3. The era since 1900 is divided into four parts: pre-World War I, between the wars, post-World War II and the New Wave. These periods are represented by authors including Valery, Proust, Malraux, Saint-Exupery, Camus, Sartre and others. Dual listed with FREN 5260. *Prerequisite:* FREN 3050; FREN 4100 and 4110 strongly recommended. (Offered every other year)

4350. Studies in French and Francophone Literatures. 3. An intensive study of a topic, period or author (pertaining to French or Francophone literature), to be selected according to interest and currency. Dual listed with FREN 5350. *Prerequisites:* FREN 3060; FREN 4100 and 4110 strongly recommended.

4990. Advanced Independent Study. 1-3 (Max. 6). Special projects designed to meet the needs of individual students, designed in consultation with instructor. *Prerequisites:* FREN 3050 and consent of instructor.

German (GERM)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1010. First Year German I. 4. Explores fundamentals of grammar, composition, conversation and reading.

1020. First Year German II. 4. Examines fundamentals of grammar, composition, conversation and reading. *Prerequisite:* GERM 1010 or two years of high school German.

2030. Second Year German I. 4. Includes reading simple novels, short stories, and dramas; grammar review; and conversation. Eight required laboratory exercises. *Prerequisite:* GERM 1020 or three years of high school German.

2040. Second Year German II. 3. [W2↔(none)] Encompasses formal grammar review; weekly composition; as well as drill of oral skill including pronunciation, oral reports and free conversation. *Prerequisite:* GERM 2030 or three years of high school German. (Offered fall semester)

2140. Introduction to Literature. 3. [C1, G1↔CH, G] Introduces literature of Germany. Analyzes major literary types and elements of criticism. *Prerequisite:* GERM 2030 or three years of high school German. (Offered spring semester)

3006. 20th Century German Culture and Civilization. 3. [W3, C1♦CH, WC] Major political, ideological and cultural developments in Germany between 1871 and the present. An interdisciplinary approach (history, art history, film and literature) allows students to explore and assess a nation's culture and civilization as well as far-reaching events (WWI, WWII and the Holocaust) from various perspectives. *Prerequisite:* junior standing.

3050. Third Year German I. 3. [W2♦WB] Encompasses formal grammar review; weekly composition; as well as drill of oral skill including pronunciation, oral reports and free conversation. *Prerequisite:* GERM 2040. (Offered spring semester)

3060. Third Year German II. 3. [W2, G1♦(none)] Emphasizes weekly compositions and corrective practice, stylistic analysis of representative texts and group discussion on prepared topics. *Prerequisite:* GERM 3050. (Offered every other year)

3990. Independent Study. 1-4 (Max. 4). Focuses on books or periodicals of special interest to the student selected in consultation with a staff member; independent reading and reports. *Prerequisite:* GERM 2030.

4070. Fourth Year German. 3. Emphasizes weekly compositions and corrective practice, stylistic analysis of representative texts and group discussion on prepared topics. Dual listed with GERM 5070. *Prerequisite:* GERM 3060. (Offered every other year)

4080. German-English and English-German Translation. 3. [C1, G1♦WB] Encompasses written translation exercises based on contemporary and relevant texts in both English and German. Addresses specific translation problems arising in both English and German, when translating into the other language. *Prerequisites:* GERM 3050 and/or 3060. (Offered fall semester)

4095. Masterpieces of German Literature in English. 3. Introduces students to masterpieces of German literature in English translation from the Age of Enlightenment to the present. Discussions of literary movements and periods, authors and the cultural, social and historical background in which these masterpieces were written are included in the interpretations of the texts. Dual listed with GERM 5095. *Prerequisite:* WB.

4100. A Survey of German Literature I. 3. Studies German literature and civilization from the Middle Ages to the 17th century. Dual listed with GERM 5100. *Prerequisite:* GERM 2140 or equivalent. (Offered every other year)

4110. A Survey of German Literature II. 3. [C1, G1♦(none)] Studies German literature and civilization from the 18th century to the end of the 20th century. Dual listed with GERM 5110. *Prerequisite:* GERM 2140 or equivalent. (Offered every other year)

4145. Weimar Classicism. 3. Introduces student to Weimar Classicism, one of the crucial periods in German literature and culture. Explores the foundation of the movement, its cultural and historical contexts, aesthetic and philosophical principles, and significant works during this period. Primary language for instruction for this course is German. Dual listed with GERM 5145. *Prerequisite:* GERM 2140 or equivalent.

4180. German Poetry. 3. [C1, G1♦(none)] Surveys poetry from the Middle Ages to the present. Emphasizes poetry after 1600. Treats formal elements and genre categories. Dual listed with GERM 5180. *Prerequisite:* GERM 2140. (Offered every third year)

4190. Contemporary German Drama. 3. [C1, G1, W3♦(none)] Surveys the most important dramas and trends since 1945. Includes readings in modern drama theory. Dual listed with GERM 5190. *Prerequisite:* GERM 2140 or equivalent. (Offered every third year)

4200. Introduction to Research. 1-3 (Max. 9). Senior seminar on a topic varying from year to year. Includes study of standard bibliographical guides. Minimum of 3 hours recommended for majors. *Prerequisite:* 12 hours of 4000-5000-level courses. (Offered every third year)

4230. 19th Century German Drama. 3. [C1, G1, W3♦(none)] Studies popular tastes and intellectual endeavors in 19th century drama after the age of Goethe. Surveys the literature during Romanticism, Young Germany, Realism, Naturalism and Expressionism. Dual listed with GERM 5230. *Prerequisite:* GERM 2140 or equivalent. (Offered every third year)

4240. German Literature of the Romantic Period. 3. [C1, G1♦(none)] Introduces the philosophical bases of German Romanticism and analyzes representative works of prose and poetry. Dual listed with GERM 5240. *Prerequisite:* GERM 2140 or equivalent. (Offered every third year)

4255. 19th Century German Novellas. 3. Studies a wide selection of significant German novellas from the period when this genre flourished in the German-speaking world, with a popularity unparalleled in the rest of Europe. Examines the form's origins, evolution, reception, and theory. Dual listed with GERM 5255. *Prerequisite:* GERM 2140 or equivalent.

4265. A Divided Nation: Politics and Culture in Germany 1945 to 1990. 3. Introduces students to major political, ideological and cultural developments in East and West Germany between 1949 and 1990. Investigates the construction of national identities based on major writings by East and West German philosophers, intellectuals and creative writers. Course is taught in German. Dual listed with GERM 5265. *Prerequisite:* GERM 2140 or equivalent.

4275. Contemporary Migration Literature. 3. Introduces students to a range of recent cultural production by artists identified with immigrant communities or communities of color. Topics examined include intersections of gender, race,

nation, culture, and class; experiences of different minorities; question of national and transnational identity, self-representation, immigration, multiculturalism and integration debates. Course is taught in German. Dual listed with GERM 5275. *Prerequisite:* GERM 2140 or equivalent.

4285. 20th/21st Century German Film. 3. Introduces students to classical German films, and thereby enhances their skills to conduct research in the Humanities. Themes to be discussed: representation of authority, issues of race and gender, German culture and history, the Americanization of German culture, minorities in contemporary Germany. Dual listed with GERM 5285. *Prerequisite:* WB.

4990. Advanced Independent Study. 1-3 (Max. 6). Encompasses special projects designed to meet needs of individual students, designed in consultation with instructor. *Prerequisites:* GERM 2140 and consent of instructor.

Greek (GRK)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1010. First Year Greek I. 4. Studies fundamentals of grammar, composition and reading in Classical Greek. (Offered based on sufficient demand and resources)

1020. First Year Greek II. 4. Studies grammar, composition and reading in Classical Greek. *Prerequisite:* GRK 1010. (Offered based on sufficient demand and resources)

2030. Second Year Greek. 4. Explores reading simple texts, stories and dramas, as well as grammar review. *Prerequisite:* GRK 1020 or equivalent. (Offered based on sufficient demand and resources)

3990. Independent Study. 1-4 (Max. 12). Encompasses independent reading, selected in consultation with instructor. *Prerequisite:* GRK 1020 or equivalent. (Offered based on sufficient demand and resources)

Japanese (JAPN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1010. First Year Japanese I. 4. Studies fundamentals of grammar, composition, conversation and reading. Introduces Japanese culture through the language. (Offered fall semester)

1020. First Year Japanese II. 4. Studies fundamentals of grammar, composition, conversation and reading. Introduces Japanese culture through the language. *Prerequisite:* JAPN 1010 or equivalent. (Offered spring semester)

2030. Second Year Japanese I. 4. Encompasses reading, speaking and writing in original Japanese syllabaries, including elementary Chinese characters for daily practical application. *Prerequisite:* JAPN 1020 or equivalent. (Offered fall semester)

2040. Second Year Japanese II. 4. Encompasses reading, speaking and writing in original Japanese syllabaries, including elementary Chinese characters for daily practical application. *Prerequisites:* JAPN 1020 and 2030 or equivalent. (Offered based on sufficient demand and resources)

3050. Third Year Japanese I. 3. Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* JAPN 2040 or equivalent. (Offered based on sufficient demand and resources)

3060. Third Year Japanese II. 3. Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisites:* JAPN 2040 and 3050 or equivalent. (Offered based on sufficient demand and resources)

3990. Independent Study. 1-4. Projects in language or literature designed to meet specific student needs or interests, selected in consultation with faculty; independent reading and reports. *Prerequisite:* JAPN 2030.

4070. Fourth Year Japanese I. 3. Incorporates intensive grammar review and combination skill development. Also emphasizes specialized lexicons, written and oral translations, conversational fluency and additional Chinese characters. *Prerequisite:* JAPN 3060. (Offered based on sufficient demand and resources)

4990. Advanced Independent Study. 1-3 (Max. 6). Encompasses special projects pertaining to Japanese language or literature to meet needs of individual students designed in consultation with instructor. *Prerequisites:* JAPN 3050 and consent of instructor. (Offered based on sufficient demand and resources)

Language (LANG)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1030. Intellectual Community in Cinema Etc. 3. [(none)↔I] Introduces students to a range of issues within the humanities through the analysis of film, television, and theater. Taught alternately by Modern and Classical Languages and English. Cross listed with ENGL 1030.

1040. Modern Business Culture in China. 3. Designed to help those who are not studying Chinese nor have any Chinese background, but are interested in Chinese business. Incorporates economic and social material to give the students a clear view of how the Chinese business world operates. *Prerequisites:* none.

3105. Major Themes in Chinese and Japanese Literature. 3-4 (Max. 4). [C1, G1↔(none)] Explores mindsets of two rich and ancient civilizations, China and Japan. Considers distinctive characters of each civilization, while illuminating basic elements that we share with these peoples. *Prerequisite:* ENGL 1010.

4485. Latin Diaspora: Comparative History of U.S. 3. [G1↔(none)] History of U.S. Latino peoples including Mexican Americans, Puerto Ricans, Cubans, Dominicans, Central Americans, South Americans and Spaniards. Historical context, origins, development of Latin American national, cultural identities, regional characteristics, immigration; nativist responses; assimilation, cultural continuity and change. Similarities, general patterns and differences, Hispanic and Pan Latino identities and probable future trends. *Prerequisite:* HIST 2370 or 2380 or CHST 1100.

4750 [3750]. Fundamentals of Linguistics. 3. An introduction to fundamentals of linguistic study, including phonology, morphology, semantics, pragmatics, and syntax, with a focus on the application of linguistic theory. Cross listed with ANTH/ENGL 4750. *Prerequisite:* 8 hours of foreign language.

4770 [3770]. Sociolinguistics. 3. Following an introduction to the fundamentals of linguistic study, an examination of the relationship and interactions among language, society, and culture, including linguistic and social behaviors with regard to the creation and modification of cultural identity. Cross listed with ANTH/ENGL 3770. *Prerequisite:* 8 hours of foreign language.

4785. Linguistics, Language Teaching and Social Context. 3. Introduces prospective teachers of English as second language to the basic components of language and to the social aspects of human language use. Explores a variety of concepts about language: how it is used and perceived, how languages change, how diverse cultures respond to such changes. Cross listed with ENGL 4785. *Prerequisite:* WB.

4800. Advanced Instruction In: ____. **1-3 (Max. 12).** Advanced study and projects designed to meet special needs and interests of students, to be selected in consultation with a suitable member of the faculty. *Prerequisite:* consent of instructor.

Other Languages (LANG)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

Modern languages not listed above are offered under the following listings in the class schedule:

1010. First Semester in ____. **1-4 (Max. 12).**

1020. Second Semester in ____. **1-4 (Max. 12).** *Prerequisite:* LANG 1010.

2030. Third Semester in ____. **1-4 (Max. 12).** *Prerequisites:* LANG 1010, LANG 1020.

2040. Fourth Semester in: ____. **3.** Encompasses formal grammar introduction and review; periodic composition; as well as drill of oral skill including pronunciation, oral reports and free conversation. *Prerequisite:* Satisfactory completion of corresponding study in LANG 2030.

Latin (LATN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1010. First Year Latin I. 4. Studies fundamentals of grammar, composition and reading. (Offered fall semester)

1020. First Year Latin II. 4. Studies fundamentals of grammar, composition and reading. *Prerequisite:* LATN 1010 or equivalent. (Offered spring semester)

2030. Second Year Latin. 4. [C1↔(none)] Reading simple texts, short stories and dramas, as well as grammar review and conversation. *Prerequisite:* LATN 1020 or equivalent. (Offered fall semester)

3110 [2110]. Vergil, The Aeneid I. 3. [C1↔(none)] Reading portions of the Aeneid and consideration of its literary interpretation. *Prerequisite:* LATN 2030 or equivalent. (Offered spring semester)

3120 [2120]. Vergil, The Aeneid II. 3. Reading further portions of the Aeneid and consideration of its literary interpretation. *Prerequisite:* LATN 3110. (Offered based on sufficient demand and resources)

3140. Caesar. 2. Acquaints students with war-memoir genre of Latin literature. *Prerequisite:* LATN 2030 or equivalent. (Offered based on sufficient demand and resources)

3150. Livy. 3. Reading portions of Livy's historical works, and consideration of the history he covers and how the Romans viewed their past. *Prerequisite:* 15 hours of college Latin or equivalent.

3160. Ovid. 2. *Prerequisite:* 15 hours of college Latin or equivalent. (Offered based on sufficient demand and resources)

3990. Independent Study. 1-4 (Max. 12). Books or texts of special interest to the student, selected in conjunction with the instructor; independent reading and reports. *Prerequisite:* LATN 2030 or equivalent. (Offered based on sufficient demand and resources)

4110. Horace. 3. *Prerequisite:* 15 hours of college Latin or equivalent. (Offered based on sufficient demand and resources)

4120. Catullus and the Elegiac Poets. 3. Discusses Latin lyric poetry of late Republic and early Empire, excluding works of Horace and Ovid, and elegiac tradition in Latin. *Prerequisite:* 15 hours of college Latin or equivalent. (Offered based on sufficient demand and resources)

Russian (RUSS)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Practical Russian. 1-3 (Max. 3). Studies fundamentals of Russian grammar for reading comprehension in professional fields. Credit granted cannot be substituted for credit in RUSS 1010, 1020 or 2030. (Offered based on sufficient demand and resources)

1005. Introduction to the Russian Sound System. 1 (Max. 2). Introduces phonetics, alphabet and intonation. Fifteen 50-minute lab sessions. Offered S/U only. (Offered fall and spring semesters)

1010. First Year Russian I. 4. Studies fundamentals of grammar, composition, conversation and reading. (Offered fall semester)

1020. First Year Russian II. 4. Studies fundamentals of grammar, composition, conversation and reading. *Prerequisite:* RUSS 1010 or two years of high school Russian. (Offered spring semester)

2005. Russian Intonation, Phonetics and Pronunciation. 1 (Max. 2). Reviews phonetics and intonation. For second year Russian students. Fifteen 50-minute lab sessions. Offered S/U only. *Prerequisite:* RUSS 1000 or 1010/1020. (Offered fall and spring semesters)

2030. Second Year Russian I. 4. Grammar completion and conversation. *Prerequisite:* RUSS 1020 or three years of high school Russian. (Offered fall semester)

2040. Second Year Russian II. 3. Reviews grammar and conversation. *Prerequisite:* RUSS 2030. (Offered spring semester)

2140. Introduction to Reading. 3. [(none)↔CH, G] Introduction to reading Russian. Analyzes major media. *Prerequisite:* RUSS 2030 or three years of high school Russian. (Offered spring semester)

3050. Third Year Russian I. 3. [C1, G1, W2↔(none)] Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* RUSS 2040 or three or four years of high school Russian. (Offered fall semester)

3060. Third Year Russian II. 3. Stresses usage of the language through composition, conversation, oral presentations and grammar review. *Prerequisite:* RUSS 3050. (Offered spring semester)

3065. Topics in Russian Language. 3. Encompasses special topics on aspects of Russian language. *Prerequisite:* RUSS 2030. (Offered either semester)

3105. 20th Century Russian Literature in English. 3. [C1, G1, W2↔(none)] Studies classics of Soviet and Pre-Soviet eras. In English. *Prerequisite:* ENGL 1010. (Offered based on sufficient demand and resources)

3150. Introduction to Literature. 3. Examines literature of Russia. Analyzes major literary types and elements of criticism. *Prerequisites:* RUSS 2040 and 2140. (Offered fall semester)

3205. Russian Folklore and Folk life. 3. [C1, G1↔CH, G]. Devoted to the study of Russian Folklore and Folk Life, with an emphasis on verbal art. Students will read primary sources in English translations, as well as critical and theoretical works in order to identify differences and commonalities reflected in the multiform interactions recounted in the folktales globally. *Prerequisite:* WA.

3990. Independent Study. 1-4 (Max. 4). Encompasses books or periodicals of special interest to the student, selected in consultation with staff member. Includes independent reading and reports. *Prerequisite:* RUSS 2040.

4070. Fourth Year Russian I. 3. Advanced work in Russian syntax and phonetics. Introduces linguistic basis of the language with practical and literary composition and conversation. *Prerequisite:* RUSS 3060 or equivalent. (Offered fall semester)

4080. Fourth Year Russian II. 3. Advanced work in Russian syntax and phonetics. Introduces linguistic basis of the language with practical and literary composition and conversation. *Prerequisite:* RUSS 4070. (Offered spring semester)

4090. Topics in Russian Linguistics. 3. Covers topics in Russian grammar from historical perspectives. *Prerequisite:* RUSS 3050 or 3065.

4105. 19th Century Russian Culture and Literature in English. 3. [C1, W3↔(none)] Explores classics of Russian fiction of 19th century. In English. Dual listed with RUSS 5105. *Prerequisite:* WB course.

4200. Senior Seminar. 3 (Max. 6). Discusses topic which varies from semester to semester. Minimum of 3 hours recommended for majors. *Prerequisite:* 12 hours of 3000- and 4000-level courses in the subject or instructor's consent. (Offered every other year)

4990. Advanced Independent Study. 1-3 (Max. 9). Students develop program of independent study in conjunction with instructor. *Prerequisite:* RUSS 3060 or equivalent.

Spanish (SPAN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1010. First Year Spanish I. 4. Studies fundamentals of grammar, composition, conversation and reading.

1020. First Year Spanish II. 4. Studies fundamentals of grammar, composition, conversation and reading. *Prerequisite:* SPAN 1010 or two years of high school Spanish.

2030. Second Year Spanish I. 4. Encompasses reading, grammar review, compositions and conversation. *Prerequisite:* SPAN 1020 or three years of high school Spanish.

2040. Second Year Spanish II. 3. Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* SPAN 2030 or three years of high school Spanish.

2140. Introduction to Literature. 3. [G1↔CH, G] Introduces Hispanic literature. Analyzes major literary types and elements of criticism. *Prerequisite:* SPAN 2030 or equivalent.

3040. Spanish Conversation. 3. Emphasizes speaking and listening comprehension through structured and monitored individual, pair, small group and class work, while providing socio-cultural competence, vocabulary acquisition and grammar review. Provides enhanced language skills in a manner that otherwise could only be attained through an extended stay in a Hispanic country. *Prerequisite:* SPAN2040; limited to Spanish majors/minors with no previous experience abroad.

3050. Third Year Spanish I. 3. [W2↔WB] Stresses usage of the language through composition, conversation, oral presentation and grammar review. *Prerequisite:* SPAN 2040.

3060. Third Year Spanish II. 3. Intensively reviews grammar and composition-skill development. Also emphasizes specialized lexicons, written and oral translation, as well as conversational fluency. *Prerequisite:* SPAN 3050.

3070. Intensive Spanish Abroad. 3. Three-week intensive Spanish language study in private language schools throughout Latin America and Spain. Program includes four hours of class per day in classes of four to eight students per teacher, room and board with host family and UW faculty escort. *Prerequisite:* SPAN 2030.

3080. Southwest Spanish. 3. [C1↔(none)] Examines the dialects of Southwest Spanish and explores their development from the Spanish conquest to the present, focusing on the linguistic systems themselves as well as on the historical, political and social factors that have influenced the development of the various dialects. Cross listed with CHST 3080. *Prerequisite:* SPAN 1020 or equivalent proficiency.

3100. Survey of Spanish Literature. 3. [C1, G1↔(none)] Studies Spanish literature from the Middle Ages to the modern period. *Prerequisite:* SPAN 2140 or equivalent.

3120. Survey of Spanish American Literature. 3. [C1, G1↔G] Surveys Spanish American literature from colonial period to the present. *Prerequisite:* SPAN 2140 or equivalent.

3200. Spanish Culture and Civilization. 3. [C1↔(none)] Studies the evolution of Spanish culture through its main artistic, sociological and intellectual expressions. *Prerequisite:* SPAN 2040, 2140.

3990. Independent Study. 1-4 (Max. 4). Encompasses books or periodicals of special interest to the student, selected in consultation with a staff member. Includes independent reading and reports. *Prerequisite:* SPAN 2030.

4070. Fourth Year Spanish I. 3. Intensively reviews grammar and composition-skill development. Also emphasizes specialized lexicons, written and oral translation and conversational fluency. *Prerequisite:* SPAN 3060.

4080. Fourth Year Spanish II. 3 (Max. 9). Encompasses special topics in language such as syntax, morphology, discourse and Spanish for special purposes (e.g. business, medicine).

4090. Spanish Phonetics and History of the Language. 3. Provides a practical guide to description and performance of Spanish phonological system and general survey of the language's historical development, as well as major dialectical variations. Dual listed with SPAN 5090. *Prerequisites:* SPAN 2030; SPAN 3050 and 3060 highly recommended.

4095. Advanced Translation. 3 (Max. 6). A practical approach to translating techniques and elements of oral interpretation. *Prerequisite:* SPAN 3060.

4125. Spanish-Language Literatures of the Americas. 3 (Max. 9). Examines Spanish American literature from a wide variety of perspectives: geographical regions (e.g. Caribbean, Andean, greater Mexico), theme (e.g. revolution, borders), period (e.g. Colonial, 19th century), or genre (e.g. poetry, theatre, film, non-fiction). *Prerequisite:* SPAN 3150 or equivalent. SPAN 3120 highly recommended.

4130. Masterpieces of Spanish Renaissance Literature. 3. [W3(none)] Studies Spanish Renaissance, taking into consideration social, political, economic, religious, philosophical and aesthetic aspects of the culture as a context for and as reflected in the literature. Dual listed with SPAN 5130. *Prerequisite:* SPAN 2140 or equivalent.

4140. Masterpieces of Spanish Baroque Literature. 3. Studies Spanish Baroque, taking into consideration social, political, economic, religious, philosophical and aesthetic aspects of the culture as a context for and as reflected in the literature. Also covers relationship between Spanish Renaissance and Baroque. Dual listed with SPAN 5140. *Prerequisite:* SPAN 2140 or equivalent.

4150. Spanish Romanticism. 3. [C1, G1(none)] Comprehensively studies romantic movement in Spain. Includes close reading and commentary of texts by authors such as Espronceda, Rivas, Zorrilla, Becquer and de Castro. Dual listed with SPAN 5150. *Prerequisite:* SPAN 2140 or equivalent.

4170. Contemporary Spanish Prose. 3. [C1, G1(none)] Examines contemporary prose fiction of Spain. Studies authors who gained recognition before and after the 1936 Spanish Civil War. *Prerequisites:* SPAN 2140 or equivalent and one 4000-level course.

4180. Contemporary Spanish Poetry. 3. [C1, G1(none)] Encompasses commentaries and analyses of selected poets dating from Generation of '98 to the present, such as Unamuno, Machado, Jimenez, Garcia Lorca,

Alberti and Salinas. Dual listed with SPAN 5180. *Prerequisites:* SPAN 2140 or equivalent and one 4000-level course.

4190. 20th and 21st Century Spanish-American Texts. 3. [W3(none)] Provides students the opportunity to study representative literary texts that reflect the tendencies and trends in 20th and 21st Century Spanish-language works of the Americas. Dual listed with SPAN 5190. *Prerequisite:* 6 hours of Spanish literature at 4000-level.

4200. Introduction to Research. 3 (Max. 9). [C1, W3(WC)] Senior seminar on a topic varying from year to year. Includes study of standard bibliographical guides. Minimum of 3 hours recommended for majors. *Prerequisite:* 12 hours of 4000- or 5000-level courses in Spanish.

4260. The Realist Novel in Spain. 3. [C1, G1(none)] Studies major novelists of 19th century Spain from 1850 until Generation of '98. Dual listed with SPAN 5260. *Prerequisite:* SPAN 2140 or equivalent.

4485. Latino Diaspora: Comparative History of U.S. 3. [G1(none)] History of U.S. Latino peoples including Mexican Americans, Puerto Ricans, Cubans, Dominicans, Central Americans, South Americans and Spaniards. Historical context, origins, development of Latin American national, cultural identities, regional characteristics, immigration; nativist responses; assimilation, cultural continuity and change. Similarities, general patterns and differences, Hispanic and Pan Latino identities and probable future trends. Cross listed with HIST 4485, and CHST 4485. *Prerequisites:* HIST 2370 or 2380 or CHST 1100.

4990. Advanced Independent Study. 1-3 (Max. 6). Encompasses special projects to meet needs of individual students, designed in consultation with instructor. *Prerequisites:* SPAN 2040 and consent of instructor.

Life Sciences Program

138 Aven Nelson Building, 766-4158

FAX: (307) 766-2851

Web site: www.uwyo.edu/lifescience

Program Director: Mark E. Lyford

The Life Sciences Program consists of all LIFE prefix courses. These courses support the life science majors and several non-life science majors across campus. The number of LIFE courses taken by life science and other majors is determined by the departments that offer the majors. The curriculum intends to provide life-science majors with both breadth and depth in the basic life sciences, and non-science majors with exposure to key concepts in biology and an understanding of the connections between science and society. The program courses also expose students to the fields of cell and molecular biology, genetics, ecology, and evolution, and they familiarize students with the diversity of life on the planet. Courses within the curriculum ad-

dress four fundamental goals at a level appropriate for each course: 1) Acquisition, Application and Synthesis of Knowledge, 2) Communication Skills, 3) Critical Thinking and Problem Solving, and 4) Research Skills.

Life Sciences (LIFE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2(none)]).

1001 [BIOL 1001]. Biology as Culture. 2. [(none)(I, L)] Introduces Life Science majors to the role of modern biology in society, the methods biologists use to generate knowledge, methods of accessing data, use of data, and the relationship between biology and other sciences. (Normally offered fall semester)

1002 [BIOL 1002]. Discovering Science. 4. [(none)(S)] Integrates Biology, Chemistry, Physics, and Earth Science for non-science majors. Fundamental concepts from each discipline are concurrently addressed through lectures, while weekly laboratory activities and discussion groups enable students to learn how to do science and place it into larger societal issues. *Prerequisites:* none. (Normally offered fall semester)

1003 [BIOL 1003]. Current Issues in Biology. 4. [(none)(SB)] Emphasizes central themes of biology – cell biology, genetics, evolution, ecology – and scientific methodology by focusing on current issues in biology. Taught in 3 two-hour blocks of lecture/discussion each week, with one usually devoted to laboratory explorations. Students cannot receive duplicate credit for LIFE 1000, 1010 or 1020. *Prerequisites:* none. (Normally offered spring semester)

1010 [BIOL 1010]. General Biology. 4. [S1(SB)] Fundamental concepts of biology, including basic chemistry of living systems, cell structures and functions, energy relations, genetics, molecular biology, ecology, population dynamics and evolutionary theory. Living invertebrate and vertebrate organisms studied during some lab meetings. Laboratory is required. Students who have credit in LIFE 1000, 1003, or 1020 may not receive duplicate credit for this course. *Prerequisite:* grade of C or better in MATH 0921 or level 2 on the Math Placement Exam or math ACT of 21 or math SAT of 600. (Normally offered fall and spring semester)

1020 [BIOL 1020]. Life Science. 4. [S1(SB)] An integrated lab and lecture emphasizing fundamental principles of biology including cell structure and function, genetics, ecology, evolution and organismal biology. Considers applications of these principles to societal issues such as the conservation of biodiversity, overpopulation and global environmental changes, biotechnology, and human wellness and disease. Duplicate credit will not be given for LIFE 1000, 1003, or 1010. *Prerequisites:* elementary education majors only; concurrent enrollment in EDCI 2000. (Normally offered fall and spring semesters)

2002 [BIOL 2002]. Global Ecology. 3. [(none)♦SB, G] Provides a global perspective on ecological processes, biodiversity, climate change, and the environmental consequences of human actions. Students develop a global awareness of the role of ecology in international human affairs, and how this influences relationships between the developed and developing worlds. For majors and non-majors. *Prerequisite:* LIFE 1002, 1003, or 1010.

2022 [BIOL 2022]. Animal Biology. 4. An integrative course addressing the evolution, anatomy, physiology, and ecology of animals. Continues building upon the four themes in LIFE 1010, cell and molecular biology, genetics, evolution, and ecology. Preserved animal specimens are dissected during some labs. Intended for students majoring in the life sciences. Laboratory is required. *Prerequisite:* LIFE 1010 with a grade of C or better. (Normally offered spring semester)

2023 [BIOL 2023]. Biology of Plants and Fungi. 4. An integrated course dealing with the central themes of biology including cell and molecular biology, genetics, evolution and ecology of plants and fungi. Intended for students majoring in the life sciences. Laboratory is required. *Prerequisite:* LIFE 1010 with a grade of C or better. (Normally offered fall semester)

2050 [BIOL 2050]. Biology of Aging and Human Development. 3. Reviews cellular, physiological, endocrine, anatomical and nutritional aspects to aging. Format relates topics, such as exercise, nutrition and evolution, to aging. Students gain insight to problems related to research in aging and its potential impact on society. Uses video-taped lectures from field experts. *Prerequisite:* LIFE 1010. (Normally offered spring semester)

3000 [BIOL 3000]. Microbial Diversity and Molecular Phylogeny. 3. Surveys the microbial world from an evolutionary perspective. Intended for students majoring in zoology, botany, microbiology, biology, molecular biology and related areas that have an ecological emphasis. Cross listed with MICR 3000. *Prerequisite:* at least one 2000-level course in life science. (Normally offered in spring semester of odd-numbered years)

3050 [BIOL 3050/BIOL 4000]. Genetics. 4. Introduces principles of heredity and variation in living organisms, including a study of the nature of the genetic material and its transmission, influence of heredity and environment on the development of individual characters, as well as evolution of organisms and artificial selection of plant and animal varieties. Emphasizes application to today's society. *Prerequisite:* completion of LIFE 1010 and one of LIFE 2022, 2023, or MICR/MOLB 2021 with a grade of C or higher in each. (Normally offered fall and spring semester)

3400 [BIOL 3400/ BIOL 2400]. General Ecology. 3. Presents fundamental concepts in population and ecosystem ecology to both majors and non-majors. Emphasizes basic principles and

their use in manipulated ecosystems. *Prerequisite:* completion of LIFE 1010 and one of LIFE 2022, 2023, or MICR/MOLB 2021 with a grade of C or higher in each. (Normally offered fall and spring semesters)

3410 [BIOL 3410/BIOL 2410]. Introduction to Field Ecology. 2. Field and laboratory course. Introduces methods used in plant and animal ecology. *Prerequisite:* LIFE 3400 (may be concurrently enrolled). (Normally offered fall semester)

3500 [BIOL 3500]. Evolutionary Biology. 3. Presents modern evolutionary theory. Examines evolution and evolutionary mechanisms from several viewpoints, with particular attention given to genetic mechanisms underlying processes of evolution and speciation. *Prerequisites:* completion of LIFE 1010 and one of LIFE 2022, 2023, or MICR/MOLB 2021 with a grade of C or higher in each. (Normally offered fall and spring semester)

3600 [BIOL 3600/ BIOL 4600]. Cell Biology. 4. Focuses on cell structure, cell function and the regulation of cell processes. Examines many levels of organization, ranging from single molecules and individual cells to multi-cellular systems and the whole organism. Discussion section is required. *Prerequisites:* completion of LIFE 1010 and one of LIFE 2022, 2023, or MICR/MOLB 2021 with a grade of C or higher in each, and one semester of Organic Chemistry. (Normally offered fall semester)

4400 [BIOL 4400]. Microbial Ecology. 3. Designed for the advanced student interested in the microbial world with an emphasis on ecology and physiology in natural aquatic and terrestrial ecosystems. Dual listed with LIFE 5400. *Prerequisite:* 1 year of biology, 1 year of chemistry, 1 course in general ecology or microbiology. (Normally offered in spring semester of even-numbered years)

4975 [BIOL 4975]. Practicum in Laboratory Teaching. 1-3 (Max. 3). Intended to give undergraduate students experience teaching in a laboratory setting. Working closely with an instructor and a graduate teaching assistant, students will assist in the teaching of biology laboratories during the semester and participate in weekly sessions centered on teaching, learning, and assessment. *Prerequisites:* completion of a 1000-level LIFE course and consent of instructor.

4976 [BIOL 4976]. Practicum in Laboratory Teaching II. 1-3 (Max 3). Intended to build on the foundation of Biology 4975. Students would work under the dual supervision of the course instructor and the graduate teaching assistant to gain further first-hand experience with teaching in biology laboratories during the semester. *Prerequisite:* LIFE 4975.

4985 [BIOL 4985]. Microbiology Seminar 1.0 (Max. 2) Provides an opportunity for students majoring in microbiology, as well as other undergraduate students in the life sciences, to gain experience in preparing, delivering and cri-

tiquing a professional scientific presentation on selected topics in microbial biology. *Prerequisite:* at least one 3000-level course in life science.

Mathematics

202 Ross Hall, 766-4221

FAX: (307) 766-6838

Web site: math.uwo.edu

Department Head: Bryan L. Shader

Professors:

MYRON B. ALLEN III, A.B. Dartmouth College 1976; M.A. Princeton University 1978; Ph.D. 1983; Professor of Mathematics 1992, 1983; Vice President, Academic Affairs 2005.

CRAIG C. DOUGLAS, B.A. University of Chicago 1977; M.S. Yale University 1977; M.Phil. 1980; Ph.D. 1982; SER Professor of Mathematics 2008.

FARHAD JAFARI, B.S. University of Wisconsin-Madison 1978; M.S. 1980; Ph.D. 1983; M.A. 1986; Ph.D. 1989; Professor of Mathematics 1999, 1991.

LUIS FELIPE PEREIRA, B.S. Federal University of Minas Gerais 1983; M.S. 1985; M.S. New York University 1988; Ph.D. State University of New York-Stony Brook 1992; SER Professor of Mathematics 2008.

PETER POLYAKOV, M.S. Moscow State University 1967; Ph.D. 1971; Professor of Mathematics 1998, 1993.

BRYAN L. SHADER, B.S. University of Wyoming 1984; M.S. University of Wisconsin-Madison 1987; Ph.D. 1990; Professor of Mathematics 2000, 1990.

Associate Professors:

HAKIMA BESSAIH, M.S. University of Algiers 1992; Ph.D. Scuola Normale Superiore di Pisa 1999; Associate Professor of Mathematics 2008, 2004.

FREDERICO da CUNHA FURTADO, B.S. Federal University of Minas Gerais 1979; M.S. Federal University of Rio de Janeiro 1984; Ph.D. Courant Institute 1989; Associate Professor of Mathematics 2002, 1997.

STEFAN HEINZ, B.S. Humboldt University 1986; M.S. Heinrich-Hertz University 1986; Ph.D. University of Wyoming 1990; Associate Professor of Mathematics 2007, 2004.

SYLVIA A. HOBART, B.A. University of California-Santa Cruz 1980; Ph.D. University of Michigan 1987; Associate Professor of Mathematics 1993, 1987.

LYNNE IPINA, B.S. South Dakota State University 1972; M.S. New York University 1978; Ph.D. 1986; Associate Professor of Mathematics 1992, 1985.

G. ERIC MOORHOUSE, B.S. University of Toronto 1980; M.S. 1984; Ph.D. 1987; Associate Professor of Mathematics 1995, 1989.

CHANYOUNG LEE SHADER, B.S. Yonsei University 1985; M.A. University of Wisconsin-Madison 1991; Ph.D. 1992; Associate Professor of Mathematics 1999, 1992.

SHAGI-DI SHIH, B.A. National Tsing Hua University (Taiwan) 1973; M.S. University of Connecticut 1978; Ph.D. University of Maryland 1985; Associate Professor of Mathematics 1995, 1985.

MAN-CHUNG YEUNG, B.S. Jinan University, China 1986; M.Ph. University of Hong Kong 1990; Ph.D. University of California-Los Angeles 1997; Associate Professor of Mathematics 2005, 2001.

Assistant Professors:

MICHELLE T. CHAMBERLIN, B.S. Colorado State University 1997; M.S. 1999; Ph.D. Purdue University 2002; Assistant Professor of Mathematics 2007.

VICTOR GINTING, B.S. Institut Teknologi Bandung Indonesia 1995; M.S. Texas A&M University 1998; Ph.D. 2004; Assistant Professor of Mathematics 2007.

LONG LEE, B.S. National Taiwan University, Taipei 1988; M.A. University of Maryland 1998; Ph.D. University of Washington 2002; Assistant Professor of Mathematics 2005.

GREGORY LYNG, B.A. Saint Olaf College 1996; M.A. Indiana University 1999; Ph.D. 2002; Assistant Professor of Mathematics 2005.

SIGUNA MÜLLER, M.S. University of Klagenfurt 1994; Ph.D. 1996; Assistant Professor of Mathematics 2005.

DAN STANESCU, B.Eng. Polytechnic Institute, Romania 1986; M.Eng. McGill University, 1994; Ph.D. Concordia University 1999; Assistant Professor of Mathematics 2003.

Associate Lecturers:

JONATHAN PREWETT, B.S. California State University, Bakersfield 1996; M.S. University of Idaho 1998; Associate Lecturer in Mathematics 2007, 2001.

JOHN SPITLER, B.S. Vanderbilt University 1977; M.S. University of Wyoming 1998; Assistant Research Scientist 1994; Associate Lecturer in Mathematics 2004, 2000.

WILLIAM WEBER, B.S. University of Wyoming 1998; M.S. 1992; Associate Lecturer in Mathematics 2005, 2001.

Assistant Lecturer:

DAVID ANTON, B.S. North Dakota State University 2001; M.S. University of Wyoming 2007; Assistant Lecturer in Mathematics 2007.

Adjunct Professors:

Robert Kansky, Dan Marchesin, Barbara Rüdiger, Richard Shumway, Larry Winter, Shaochang Wo

Professors Emeriti:

Leonard Asimow, Robert Buschman, Benito M. Chen-Carpentier, George C. Gastl, John H. George, Syed Husain, Eli Isaacson, Terry Jenkins, A. Duane Porter, Ben G. Roth, John Rowland, Virindra Sehgal, Leslie E. Shader, Raymond Smithson

“For the things of this world cannot be made known without a knowledge of mathematics.”--Roger Bacon

Mathematics, often described as the language of science, has historically played an important role in describing the physical world around us. Today, mathematics is a crucial tool in the exploration of the frontiers of the biological, behavioral, social and managerial sciences.

Virtually every student at UW will take one or more math courses in fulfillment of graduation requirements. These courses are designed to provide students with some of the quantitative skills needed in today's ever-changing high technology job market and to illustrate the broad range of applicability and esthetics embodied in the study of mathematics.

A major in mathematics at UW gives a broad educational background. The department strives to nurture and prepare its students for successful careers in the mathematical sciences, whether in business, industry, education or government. The Math Club, Putnam team, and various research opportunities add enriching mathematical experiences for undergraduate students. Colloquiums and weekly seminars in Analysis, Applied and Computational Mathematics, and Algebra, Combinatorics and Number Theory expose students and faculty to exciting new developments in mathematics.

A complete graduate program is also offered, including the M.A., M.S., M.S.T. and Ph.D. degrees. For more information, see the *Graduate Bulletin*.

Mathematics Placement

All UW math courses have prerequisites which are detailed in the course listings below. These are to assure that each student has the best possible opportunity for success in the course. In accordance with this, *all students registering for a math course will have their records checked in order to determine whether the prerequisite is satisfied*.

A computerized prerequisite check is run prior to the start of every semester. *Students who preregistered for a math course but have not satisfied the prerequisites at the time of the check will be automatically dropped from the course*.

Prerequisites for courses numbered 2200 or lower, and 2350 (Business Calculus), may be satisfied in one of four ways:

1. Obtain a grade of C or better in a prerequisite course. Note that non-credit courses from out-of-state colleges are not accepted as prerequisites.
2. Pass the Mathematics Placement Exam (MPE) at the stated level within one year of the start of the course.
3. Obtain a sufficiently high score on one of the following standardized exams within three years of the start of the course: ACT composite math score, SAT quantitative score, GRE quantitative score.

4. Obtain a sufficiently high score on one of the following standardized exams: AP Calculus, CLEP, or IB.

More information on mathematics placement may be obtained from the Center for Advising on Mathematics Placement (CAMP), 30 Ross Hall, 766-6577, or at www.uwyo.edu/mpe.

Duplication of Courses

To avoid loss of credit because of duplication of course content, please note the following: (a) students who have taken MATH 1450 should not take MATH 1400 or MATH 1405; (b) students who have taken MATH 1400 and MATH 1405 should not take MATH 1450; (c) students who have had MATH 1400 may enroll in MATH 1450; however only two additional hours of credit will be granted.

Undergraduate Major

The mathematics major is designed to give students a solid grounding in basics, while allowing flexibility and specialization in more advanced courses.

The required core courses for a mathematics major are the three courses of the Calculus sequence (Math 2200, 2205, 2210), Linear Algebra (2250), one of the two math seminar courses (2800 or 2850), and a four credit hour programming course (typically COSC 1010 or 1030).

In addition, nine upper division math electives (27 credit hours) are required at the 3000 or above level; Math 2310 may also be used as one of these. Two of the math electives may be chosen to be courses in other departments which have significant math content, upon approval by the student's adviser. More details about such courses are available on the math department's web site, math.uwyo.edu.

We expect that a student graduating with a degree in mathematics will:

- Have a solid understanding of core concepts in calculus and linear algebra;
- Be able to read and present mathematical arguments;
- Apply mathematical concepts and skills to solve appropriate problems, with an understanding of how math relates to the world around us.

Concentrations

There are three areas of concentration available for math majors, and the math department encourages students to consider choosing one which is appropriated to their interests and goals. Each consists of a specific list of courses for the upper division electives.

The Graduate School Preparation concentration emphasizes rigorous theoretical mathematics, and prepares the student for graduate work. The Applied Mathematics concentration focuses on the math used in industry and prepares the student for jobs which require working with en-

gineers and scientists. The third concentration, Secondary Education, is intended for prospective high school math teachers. The math requirements are identical to those of the Secondary Mathematics Education Major in the College of Education, and meet the mathematics part of the requirements for Wyoming certification. For specific course lists for each concentration, see the math department web site, math.uwyo.edu.

Undergraduate Minor

Interdisciplinary work has become more important in our increasingly technological age, and mathematical and problem solving skills are part of many professions. A minor in mathematics can demonstrate these abilities.

The requirements for a math minor are 30 credit hours of math courses, at least 12 of which are from courses not counted toward the major. These must consist of the math core courses (2200, 2205, 2210, 2250, 2800 or 2850, and four credit hours of programming) and three upper division math electives (chosen from Math 2310 and math courses numbered 3000 or above).

Interested students who complete a minor and want to take more math courses are encouraged to consider extending this to a dual degree or concurrent major.

Mathematics (MATH)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Problem Solving. 3. [M1↔QA] For students not planning to enroll in MATH 1400, 1450 or a calculus course. Examines modern topics chosen for their applicability and accessibility. Provides students with mathematical and logical skills needed to formulate, analyze and interpret quantitative arguments in a variety of settings. Introduces statistics and stresses the use of a calculator. *Note:* MATH 1000 is neither a prerequisite nor suitable preparation for MATH 1400 (College Algebra). *Prerequisite:* grade of C or better in Math 0921 or Level 2 on the Math Placement Exam or Math ACT of 21 or Math SAT of 600.

1050. Finite Mathematics. 3. [M2↔QB] Introduces finite mathematics for majors not requiring calculus. Includes matrix algebra, Gaussian elimination, set theory, permutations, probability and expectation. *Prerequisite:* grade of C or better in MATH 1000, 1400 or 1105 or Level 4 on the Math Placement Exam or Math ACT of 26 or Math SAT of 600.

1100. Number and Operations for Elementary School Teachers. 3. For prospective elementary school teachers; purpose is to prepare students to be competent in teaching the major concepts and skills related to the real number system and four arithmetic operations. Includes asking and answering critical questions about subsets of the real number system, including natural, integer, and rational numbers. *Prerequisite:*

site: grade of C or better in MATH 0921 or Level 2 on the Math Placement Exam or Math ACT of 21 or Math SAT of 600.

1105. Data, Probability, and Algebra for Elementary School Teachers. 3. [M2↔QB] Continuation of MATH 1100 for prospective elementary teachers; emphasis is on asking and answering critical questions about our world through algebra, probability, and data analysis to prepare students to be competent in teaching these major concepts. Explorations focus on representing, analyzing, and generalizing patterns and the chances of future events. *Prerequisite:* grade of C or better in MATH 1100.

1305. Bit Streams and Digital Dreams. 3. [(none)↔I] Introduction to information theory, coding theory and cryptology. Principles and practice of quantifying, compressing, encrypting, decrypting and protecting digital information from transmission errors or unauthorized human access. Emphasis on historical and current applications rather than on mathematical foundations. *Prerequisites:* none.

1400. College Algebra. 3. [M1↔QA] Emphasizes aspects of algebra important in the study of calculus. Includes notation of algebra, exponents, factoring, theory of equations, inequalities, functions, graphing and logarithms. For students who plan to enroll in a calculus course (MATH 2200 or 2350). Students receiving credit for MATH 1450 may not receive credit for this course. *Prerequisite:* grade of C or better in Math 0925 or Level 3 on the Math Placement Exam or Math ACT of 23 or Math SAT of 600.

1405. Trigonometry. 3. [M1↔QA] Emphasizes aspects of trigonometry important in the study of calculus. Interplay between trigonometric expressions and their graphs. Students are expected to use a graphing calculator in the course and on exams. See instructor for specifications. Topics include: angle measurement, trigonometric functions, graphing, laws of sines and cosines, identities, equations, polar equations and graphs, vectors, complex numbers, DeMoirve's theorem. This course is designed for students with little or no prior knowledge of trigonometry who plan to enroll in MATH 2200. Students receiving credit for MATH 1450 may not receive credit for this course. *Prerequisite:* grade of C or better in MATH 1400 or Level 4 on the Math Placement Exam or Math ACT of 25 or Math SAT of 600.

1450. Algebra and Trigonometry. 5. [M1↔QA] Emphasizes aspects of algebra, trigonometry and problem solving important in the study of calculus. Functions and their applications to real world problems. Classes of functions including polynomial, exponential, logarithmic and trigonometric functions. Intuitive introduction to the idea of limit and sequence which are developed further in the calculus sequence. For the student with considerable prior exposure to trigonometry and algebra. Graphing calculators are used frequently in class and on assignments. See instructor for specifications. Students with

both MATH 1400 and 1405 credit may not receive credit for this course. *Prerequisite:* grade of C or better in MATH 0925 or Level 3 on the Math Placement Exam or Math ACT of 23 or Math SAT of 600.

2120. Geometry and Measurement for Elementary School Teachers. 3. Continuation of MATH 1105 for prospective elementary teachers; emphasis is asking and answering critical questions about spatial reasoning as evident in the real world. Includes investigations of two- and three-dimensional shapes and their properties, measurements, constructions, and transformations to prepare students to be competent in teaching these concepts. *Prerequisite:* grade of C or better in MATH 1105.

2200. Calculus I. 4. [M2↔QB] Emphasizes physical science applications. Includes plane analytic geometry, differentiation, applications of the derivative, differential equations, integration and applications. *Prerequisite:* grade of C or better in MATH 1405 or 1450 or Level 5 on the Math Placement Exam or Math ACT of 27 or Math SAT of 600.

2205. Calculus II. 4. [M2↔(none)] Continues MATH 2200. Includes elementary functions, derivatives, integrals, analytical geometry, infinite series and applications. *Prerequisite:* grade of C or better in MATH 2200 or Advanced Placement credit in MATH 2200.

2210. Calculus III. 4. [M2↔(none)] Continues MATH 2200, 2205. Includes vectors and solid analytic geometry, partial differentiation and multiple integration. *Prerequisite:* grade of C or better in MATH 2205 or Advanced Placement credit in MATH 2205.

2250. Elementary Linear Algebra. 3. Studies linear equations and matrices, vector spaces, linear transformations, determinants, orthogonality, eigenvalues and eigenvectors. *Prerequisite:* grade of C or better in MATH 2200 or 2350.

2300. Discrete Structures. 3. Introduces the mathematical concepts that serve as foundations of computer science: logic, set theory, relations and functions, graphs (directed and undirected), inductively defined structures (lists and trees), and applications of mathematical induction. Provides an introduction to abstract and rigorous thinking in advanced mathematics and computer science. Cross listed with COSC 2300. *Prerequisite:* grade of C or better in COSC 1030, MATH 2200 or 2350.

2310. Applied Differential Equations I. 3. [M2↔(none)] Combines with MATH 3310 for one-year series in applied mathematics. Includes solution of ordinary differential equations, integral transforms. Emphasizes construction of mathematical models arising in physical science and other areas. *Prerequisite:* grade of C or better in MATH 2205. (*Note:* MATH 2210 is required for the sequel.)

2350. Business Calculus. 4. [M2↔QB] Combines with MATH 2355 for one-year series in business math, primarily for students in the College of Business. Includes review of functions, their graphs and algebra; derivatives and their applications; exponential and logarithmic functions; integration and applications; and applications are generally geared to business problems. *Prerequisite:* grade of C or better in MATH 1400 or Level 4 on the Math Placement Exam or Math ACT of 26 or Math SAT of 600.

2355. Mathematical Applications for Business. 4. Continues business and economic applications of mathematics. Also includes linear equations and programming, finance, probability and statistics. Mandatory computer lab using spreadsheet software will meet one day per week. *Prerequisite:* grade of C or better in MATH 2200 or 2350.

2800. Mathematics Major Seminar. 2. Introduces mathematics majors and mathematics minors to mathematical investigation and discovery. Typically, a range of topics are covered; may include reading assignments and group or individual work on projects for presentation. Offered S/U only.

2850 [3800]. Putnam Team Seminar. 2 (Max. 8). Preparation for the William Lowell Putnam Mathematical Competition. Problem solving strategies and mathematical content appropriate for the Putnam Exam are emphasized with problem sets taken from previous Putnam or other international math contests. Offered S/U only. *Prerequisites:* MATH 2200, 2205. (Offered fall semester)

3000. Fundamental Concepts of Mathematics. 3. [M3↔(none)] An introduction to mathematical proof. Topics include elements of propositional logic, naïve set theory, and proof techniques such as direct proof, proof by contrapositive, mathematical induction, and proof by contradiction. Explores applications of these concepts to number theory, mathematical analysis, and other branches of mathematics. *Prerequisite:* grade of C or better in MATH 2250. (Offered fall semester)

3200. Polynomials. 3. [M3↔(none)] Rigorous study of polynomials, including an introduction to mathematical proof. Includes basic properties of polynomials and their roots together with connections to algebra, analysis, geometry, number theory, and numerical analysis. *Prerequisite:* grade of C or better in MATH 2250. (Offered spring semester)

3310. Applied Differential Equations II. 3. Continues MATH 2310. Includes partial differential equations, Fourier series, boundary value problems, series solutions of ordinary differential equations, linear algebra, linear systems of equations and numerical methods. *Prerequisite:* grade of C or better in MATH 2210 and 2310.

3500. Applied Algebra. 3. Shows how uses of algebraic structures in computer science and physical sciences have increased dramatically in recent years. Introduces some of these structures

(partial orderings, groups, codes, fields and algebras) and their applications to other disciplines. *Prerequisites:* grade of C or better in MATH 2250 and 2300 or 3200 or 3000. (Offered fall semester)

3550. Introduction to Abstract Algebra. 3. Provides basic introduction to groups, rings and fields. Emphasizes axiomatic development. Includes applications to number theory and geometry. *Prerequisite:* grade of C or better in MATH 3200 or 3000. (Offered spring semester)

4000. History of Mathematics. 3. Explores the roots of mathematics, and the people who made significant contributions to it. Mathematical subjects typically include algebra, calculus and number theory; both chronological and topical approaches are employed. *Prerequisite:* grade of C or better in MATH 2205. (Offered spring semester)

4100. Mathematics in the Elementary School. 1-6 (Max. 6). Acquaints prospective or experienced teachers of mathematics with newer developments in mathematics curriculum and materials. Emphasizes mathematical basis for courses in an elementary mathematics curriculum; organization and design of mathematics programs for grades K-7; and design and construction of curriculum and/or materials to meet specific needs of the teacher or school district. *Prerequisites:* grade of C or better in MATH 1105 and consent of instructor.

4150. Secondary School on Campus. 1-4 (Max. 8). Provides prospective teachers opportunity to study mathematics as it relates to the secondary school. Topics may vary from semester to semester. Emphasizes current trends and concerns of secondary school mathematics education. *Prerequisites:* grade of C or better in MATH 2205 and 3200 or 3000. (Offered fall semester)

4200. Mathematical Analysis I. 3. [M3↔(none)] Combines with MATH 4205 for a one-year series providing rigorous treatment of the foundations of mathematical analysis. Includes discussion of properties of real numbers, set theory, elementary metric space topology, series and sequences, limits, continuity, differentiation, Riemann and Riemann-Stieltjes integration, sequences and series of functions, equicontinuity, functions of several variables, inverse and implicit function theorems, and multi-dimensional integration theory. *Prerequisites:* grade of C or better in MATH 2250 and 2210 and either 3200 or 3000. (Offered fall semester)

4205. Mathematical Analysis II. 3. Continues MATH 4200. *Prerequisite:* grade of C or better in MATH 4200. (Offered spring semester)

4230. Introduction to Complex Analysis. 3. Develops the theory of functions of one complex variable. Topics include the algebra and geometry of complex numbers, functions of one complex variable, elementary functions, limits, continuity and differentiation. Differentiability leads to the Cauchy theorem, integral theorems, power series, residue theory and applications to

integration theory and boundary value problems. *Prerequisite:* grade of C or better in MATH 2210. (Offered spring semester)

4255 [4250]. Mathematical Theory of Probability. 3. [M3↔(none)] Calculus-based. Introduces mathematical properties of random variables. Includes discrete and continuous probability distributions, independence and conditional probability, mathematical expectation, multivariate distributions and properties of normal probability law. Cross listed with STAT 4255. *Prerequisite:* grade of C or better in MATH 2210.

4265. Introduction to the Theory of Statistics. [4260, 4010]. Introduction to the Theory of Statistics. 3. Presents derivations of theoretical and sampling distributions. Introduces theory of estimation and hypothesis testing. Cross listed with STAT 4265. *Prerequisite:* MATH 4255.

4300. Introduction to Mathematical Modeling. 3. A model of a real world problem captures the essential features of the problem, while scaling it down to a manageable size. In this course, symbolic tools and mathematical techniques are used to construct, analyze and interpret various mathematical models which arise from problems in the physical, biological and social sciences. *Prerequisite:* grade of C or better in MATH 2250 or 3310. (Offered fall semester)

4340. Numerical Analysis. 3. Considers computer methods and their accuracy for applied mathematics. Topics include machine arithmetic, analysis of rounding error, solution methods for linear systems and nonlinear equations, interpolations, numerical differentiation and integration, and numerical solution of differential equations. Includes some programming. Cross listed with COSC 4340. *Prerequisites:* Grade of C or better in COSC 1010, Math 2310, and either MATH 2250 or 3310. (Offered spring semester)

4400. Vector Calculus. 3. Offers less rigorous treatment of multivariable calculus than MATH 4205. Includes sequences and series of functions, power series and Taylor's theorem, partial differentiation, implicit functions, Lagrange multipliers, double and triple integrals, vector fields, line and surface integrals and applications to fluid flow, divergence and gradients. *Prerequisites:* grade of C or better in MATH 2250 or 3310 and 2210. (Offered fall semester)

4420. Advanced Logic. 3. Studies advanced topics in mathematical logic. Takes up such topics as: uninterpreted calculi and the distinctive contributions of syntax and semantics; metatheory, including completeness and consistency proofs; modal logic and semantics; logic as a philosophical tool. Cross listed with COSC/PHIL 4420. *Prerequisite:* PHIL 3420 or equivalent.

4440. Partial Differential Equations I. 3. Includes first order partial differential equations, classification of 2nd order equations and canonical forms, elementary elliptical, hyperbolic and parabolic boundary value problems, transform methods, series solutions and Green's functions. *Prerequisites:* grade of C or better in MATH 2210 and MATH 2310. (Offered spring semester)

4500. Matrix Theory. 3. Continuation from MATH 2250 of the study of matrices, an important tool in statistics, physics, engineering and applied mathematics in general. Concentrates on the structure of matrices, including diagonalizability; symmetric, hermitian and unitary matrices; and canonical forms such as Jordan form. *Prerequisite:* grade of C or better in MATH 2250. (Offered fall semester)

4550. Theory of Numbers. 3. Studies topics in mathematics which are motivated by questions about integers. Topics include divisibility, congruences, diophantine equations, quadratic residues, primitive roots, primes, and representations of positive integers. *Prerequisite:* grade of C or better in MATH 3000 or 3200. (Offered spring semester)

4600. Foundations of Geometry. 3. Broadens the student's understanding of the many faces of geometry and provides a context for the specific case of Euclidean geometry. Various approaches will be presented, including axiomatic, synthetic, coordinate, and transformational methods. *Prerequisite:* grade of C or better in MATH 3200 or 3000. (Offered fall semester)

4800. Seminar in Mathematics. 1-3 (Max. 6). Exposes students to problems and thinking in mathematics which would otherwise be unavailable. *Prerequisite:* consent of instructor.

NOTE: See the Graduate Bulletin for descriptions of 5000-level courses.

Microbiology Program

Program Director: Kenneth Mills

Phone: (307) 766-6664

FAX: (307) 766-3875

E-mail: kmills@uwyo.edu

The Bachelor of Science degree program in microbiology is organized as an interdepartmental major involving the collaborative teaching, advising and research expertise of more than 20 microbiology faculty from the Colleges of Arts and Sciences, Agriculture and Health Sciences. The program is administered by a program director and a coordinating committee which represents each of the participating colleges. Students may obtain their degree in either the College of Arts and Sciences or the College of Agriculture. Students interested in majoring in microbiology in the College of Arts and Sciences should contact the A&S Dean's office for college requirements for the 2003 A&S Core Curriculum. Please see the College of Agriculture Microbiology Program section for a list of faculty and program information.

Music

258 Fine Arts Center, 766-5242

FAX: (307) 766-5326

Web site: www.uwyo.edu/music

Department Head: David Brinkman

Professors:

STEVE BARNHART, B.M.E. Texas Tech University 1973; M.M. North Texas State University 1980; D.M.A. University of Kansas 1989. Percussion, Jazz Ensemble.

ROBERT BELSER, B.M.E. Central Missouri State University 1977; M.S. M.E University of Illinois 1982; D.M.A. University of Iowa 1994; Director of Bands, Conducting, Music Education.

THERESA L. BOGARD, B.M. University of Colorado 1983; M.M. Eastman School of Music 1985; D.M.A. University of Colorado 1990; Associate Professor of Music 1998, 1992. Keyboard, Keyboard Area Coordinator, Piano, Theory.

DAVID J. BRINKMAN, B.M.E. University of Nebraska 1971; M.M. 1991; Ph.D. University of Nebraska-Lincoln 1994; Associate Professor of Music 2000, 1995; Music Education.

RODNEY GARNETT, B.M.E. University of Colorado 1975; M.M. 1986; Associate Professor of Music 1998, 1991. Flute, Music Education.

MICHAEL GRIFFITH, B.M.E. Michigan State University 1973; M.M. 1975; D.M.A. University of Colorado 1994; Professor of Music 2001, 1989. Conducting, Woodwinds.

LARRY L. HENSEL, B.A. Macalester College 1981; M.M. 1984; D.M.A. in Performance and Literature, Eastman School of Music 1993; Professor of Music 2007, 1996. Vocal Arts Area Coordinator, Voice, Opera Theatre, Vocal Literature.

JAMES PRZYGOCKI, B.M. Western Michigan University 1979; M.M. Indiana University 1984; Professor of Music 2005, 1999, 1993. Viola, String Methods, Music Education.

Associate Professors:

JOHN FADIAL, B.M. North Carolina School of the Arts; M.M. Eastman School of Music; D.M.A. University of Maryland; Violin.

J. SCOTT TURPEN, B.M.E. Boise State University 1994; M.M. University of Georgia 1996; D.M.A. 1999; Assistant Professor of Music 2001. Director of Jazz Studies, Saxophone.

KATRINA ZOOK, B.M. Oberlin College 1986; M.M. University of California—Santa Barbara 1992; D.M.A. Eastman School of Music 2000; Associate Professor of Music 2005, 1999. Voice, Music Appreciation, Vocal Methods, Vocal Pedagogy.

Assistant Professors:

ANNE GUZZO, B.M. University of New Mexico 1992; M.A. University of California, Santa Cruz 1996; Ph.D. University of California, Davis 2002; Assistant Professor of Music 2006.

SCOTT MEREDITH, B.M., B.M.E. University of Northern Colorado; M.A. , D.M.A. University of North Texas; Assistant Professor of Music 2009.

RUBIA SANTOS, B.M. University Sao Judas Tadeu, San Paulo, Brazil; Artist Diploma, Musikhochschule, Cologne, Germany 1987; M.M. Arizona State University 1997; D.M.A. 2004; Assistant Professor of Music 2007.

MARK SHERIDAN-RABIDEAU, B.A., D.M. University of Illinois at Urbana-Champaign; M.M. University of Notre Dame; Assistant Professor of Music 2007.

BETH VANDERBORGH, B.M. Manhattan School of Music; M.M. Eastman School of Music; D.M.A. University of Maryland; Assistant Professor of Music, Cello.

Lecturers:

McKeage, J. Turpen

Part-time Lecturers:

Berlinsky, Boehm Shaffer, Fleg, Hart, Hoffman, Latchininsky, LaTouche, Bird Reynolds, Riner, Sinift, Sorensson, Strampe, Wallace

Professors Emeriti:

Gordon Childs, Julia Combs, Frederick Gersten, Brian Hanly, Edgar Lewis, William Stacy, Carlyle Weiss

The Department of Music offers undergraduate and graduate degree programs which combine scholarship with performance, theory with practice and the academic with the creative. It also provides an opportunity for the study and performance of music by university students who are not majors in music. By giving concerts, workshops and lectures throughout the state of Wyoming through the Cultural Outreach Program, the music department serves as a musical resource for the entire state. The music department is fully accredited by the National Association of Schools of Music.

Procedures and requirements are listed in the music department *Student Handbook*, which is available online at www.uwyo.edu/music/forms.asp. The music department *Student Handbook* and the *General Bulletin* are binding documents for the degree programs listed below.

Degrees

Bachelor of Arts (with major in music):

A program designed for the student who desires a broadly based liberal arts program.

Bachelor of Music Performance:

A four-year course of study designed for students who wish to prepare for a professional career as performer and applied teacher.

Bachelor of Music Education: A four-year course of study for the student who wishes to prepare for a career as a teacher of music in elementary or secondary schools in the instrumental, vocal, and general music fields.

Performer’s (post-baccalaureate) Certificate

A non-degree course of study for the student seeking to improve professional performance skills. The program consists of a total of 30 credit hours from applied lessons, ensembles and electives to be selected in consultation with the major adviser. Prerequisites are demonstrated evidence of advanced performance proficiency through a live or taped audition and admission to the university.

Music for Other Students

Music as an elective subject. Students from other departments of the university may, with consent of their adviser and applied instructor, elect private or class lessons in applied music (with or without previous training) and may enroll in any theory, music literature or activity course for which they are qualified. See the music department *Student Handbook* for requirements for a minor in music.

Organizations. Performance organizations include the Marching Band, Symphonic Band, Wind Ensemble, Collegiate Chorale, University Orchestra, Chamber Orchestra, Statesmen, Women’s Choir, and Opera Theatre. Other groups are brass, woodwind, string, percussion and piano ensembles, Vocal Jazz, Civic Chorus and Jazz Ensemble. Membership is open to qualified students in all colleges and departments of the university. Each year, in addition to frequent appearances on the campus, several of these organizations and groups are heard on tour in Wyoming and neighboring states.

Music Fees

For Individual Instruction:

One 1/2-hour lesson weekly,
per semester\$140.00
One 1-hour lesson weekly,
per semester\$280.00

For Music 4510, 4520, 4530, 4540, 4550 and 4560 (courses taken in the form of private lessons) a fee of \$85.00 is assessed each semester.

Practice Rooms:

per semester \$35.00

Bachelor of Arts in Music

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one ensemble per semester. All music majors must pass the piano proficiency test during their sophomore year. Class Piano I-IV is highly recommended for majors with little piano background. Consult your adviser for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Arts degree in Music, students will be able to: (1) demonstrate a level of competence as solo and ensemble performers appropriate for a musician educated in the liberal arts, (2) demonstrate specific knowledge in music theory, music history, and general studies appropriate for their professional goals, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC 1003 Introduction to Music 3
 MUSC 0200 Convocation 0
 MUSC 1030 Written Theory I..... 3
 MUSC 1035 Aural Skills I1
 MUSC 1040 Written Theory II 3
 MUSC 1045 Aural Skills II.....1
 MUSC 2030 Written Theory III 3
 MUSC 2040 Written Theory IV 3
 MUSC 2050 Historical Survey I 3
 MUSC 2055 Historical Survey II..... 3
 MUSC 2395 Piano Proficiency..... 0
 MUSC 3255 Sophomore Perf. Jury 0
 MUSC 4070 Conducting 3
 MUSC **** Ensembles..... 8
 MUSC 2*** Applied Lessons II 2
 MUSC 3*** Applied Lessons III 2
 MUSC 4*** Applied Lessons IV 2
 MUSC 5*** Applied Lessons V 2

Music Electives (13 Hrs.)

MUSC 4010 Counterpoint 3
 MUSC 4030 Form and Analysis..... 3
 MUSC 4300 Instrumentation and Arr 3
 MUSC 4040 Composition..... 2
 MUSC 4590 Senior Recital..... 2
 MUSC 4320 Medieval Period 3
 MUSC 4325 Renaissance Period 3
 MUSC 4330 Baroque Period 3
 MUSC 4335 Classic Period 3
 MUSC 4340 Romantic Period 3
 MUSC 4345 Contemporary Period..... 3
 MUSC 4350 Hist and Lit of Jazz 3
 MUSC 5410 Hist of Musical Instrum..... 2

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this bulletin. A minimum of 48 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music in Performance: Instrumental Emphasis

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one major ensemble per semester. All music majors must pass the piano proficiency test during their sophomore year. Class Piano I-IV is

highly recommended for majors with little piano background. Consult your adviser for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music degree in Instrumental Performance, students will be able to: (1) demonstrate excellence as solo and ensemble performers to provide a basis for a professional career as a musician, (2) demonstrate specific knowledge in music theory, music history, and instrumental pedagogy to provide a basis for a professional career as a performing musician, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC 1003 Introduction to Music 3
 MUSC 0200 Convocation 0
 MUSC 1030 Written Theory I..... 3
 MUSC 1035 Aural Skills I1
 MUSC 1040 Written Theory II 3
 MUSC 1045 Aural Skills II.....1
 MUSC 2030 Written Theory III 3
 MUSC 2035 Aural Skills III.....1
 MUSC 2040 Written Theory IV 3
 MUSC 2045 Aural Skills IV1
 MUSC 2050 Historical Survey I..... 3
 MUSC 2055 Historical Survey II..... 3
 MUSC 2395 Piano Proficiency..... 0
 MUSC 3255 Sophomore Perf. Jury 0
 MUSC 3500 Junior Recital..... 0
 MUSC 4010 Counterpoint 3
 MUSC 4030 Form and Analysis..... 3
 MUSC 4070 Conducting 3
 MUSC 4300 Instrumentation and Arr 3
 MUSC 4040 Composition..... 2
 MUSC 4590 Senior Recital..... 2
 MUSC **** Ensembles..... 8
 MUSC 2*** Applied Lessons II3-4
 MUSC 3*** Applied Lessons III 4
 MUSC 4*** Applied Lessons IV 4
 MUSC 5*** Applied Lessons V 4

Instrumental Emphasis

MUSC 4615 Specific Pedagogy 2

Music Electives (9 Hrs.)

MUSC 4320 Medieval Period 3
 MUSC 4325 Renaissance Period 3
 MUSC 4330 Baroque Period 3
 MUSC 4335 Classic Period 3
 MUSC 4340 Romantic Period 3
 MUSC 4345 Contemporary Period..... 3
 MUSC 4350 Hist and Lit of Jazz 3
 MUSC 5410 Hist of Musical Instrum..... 2

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this bulletin. A minimum of 48 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music in Performance: Keyboard Emphasis

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one ensemble per semester. Passing the piano proficiency test is required of all music majors during their sophomore year. Consult your adviser for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music degree in Instrumental Performance, students will be able to: (1) demonstrate excellence as solo and ensemble performers to provide a basis for a professional career as a musician, (2) demonstrate specific knowledge in music theory, music history, and instrumental pedagogy to provide a basis for a professional career as a performing musician, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC	1003 Introduction to Music	3
MUSC	0200 Convocation	0
MUSC	1030 Written Theory I.....	3
MUSC	1035 Aural Skills I.....	1
MUSC	1040 Written Theory II.....	3
MUSC	1045 Aural Skill II	1
MUSC	2030 Written Theory III.....	3
MUSC	2035 Aural Skills III.....	1
MUSC	2040 Written Theory IV	3
MUSC	2045 Aural Skills IV.....	1
MUSC	2050 Historical Survey I.....	3
MUSC	2055 Historical Survey II.....	3
MUSC	2395 Piano Proficiency.....	0
MUSC	3255 Sophomore Perf. Jury	0
MUSC	3500 Junior Recital.....	0
MUSC	4010 Counterpoint	3
MUSC	4030 Form and Analysis.....	3
MUSC	4070 Conducting	3
MUSC	4300 Instrumentation and Arr	3
MUSC	4590 Senior Recital.....	2
MUSC	**** Ensembles/Accompan.....	8
MUSC	2200 Applied Lessons II.....	6-8
MUSC	3200 Applied Lessons III	8
MUSC	4200 Applied Lessons IV.....	8
MUSC	5200 Applied Lessons V.....	8

Keyboard Emphasis

MUSC	4600 Piano Pedagogy.....	2
MUSC	4650 Keyboard Literature	3

Music Electives (9 Hrs.)

MUSC	4320 Medieval Period	3
MUSC	4325 Renaissance Period.....	3
MUSC	4330 Baroque Period	3
MUSC	4335 Classic Period	3
MUSC	4340 Romantic Period	3
MUSC	4345 Contemporary Period.....	3
MUSC	4350 Hist and Lit of Jazz I	3
MUSC	5410 Hist of Musical Instrum.....	2

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this bulletin. A minimum of 48 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music in Performance: Vocal Emphasis

All music majors must successfully complete MUSC 0200 Convocation (0 credit, S/U) each semester in residence and must enroll in lessons and one ensemble per semester. Passing the piano proficiency test is required of all music majors during their sophomore year. Class Piano I-IV is highly recommended for majors with little piano background. Vocal majors must complete 8 hours of a single, traditional foreign language. Consult your adviser for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music degree in Instrumental Performance, students will be able to: (1) demonstrate excellence as solo and ensemble performers to provide a basis for a professional career as a musician, (2) demonstrate specific knowledge in music theory, music history, and vocal pedagogy to provide a basis for a professional career as a performing musician, and (3) demonstrate the ability to think, speak, and write clearly and effectively about the art of music.

Music Core

MUSC	1003 Introduction to Music	3
MUSC	0200 Convocation	0
MUSC	1030 Written Theory I.....	3
MUSC	1035 Aural Skills I.....	1
MUSC	1040 Written Theory II.....	3
MUSC	1045 Aural Skills II.....	1
MUSC	2030 Written Theory III.....	3
MUSC	2035 Aural Skills III.....	1
MUSC	2040 Written Theory IV	3
MUSC	2045 Aural Skills IV.....	1
MUSC	2050 Historical Survey I.....	3

MUSC	2055 Historical Survey II.....	3
MUSC	4010 Counterpoint	3
MUSC	4030 Form and Analysis.....	3
MUSC	4070 Conducting	3
MUSC	4300 Instrumentation and Arr	3
MUSC	4590 Senior Recital.....	2
MUSC	**** Ensembles.....	8
MUSC	2770 Voice II	3-4
MUSC	3270 Voice III	4
MUSC	4270 Voice IV.....	4
MUSC	5270 Voice V	4
	Piano Proficiency	0

Vocal Emphasis

MUSC	2320 Diction for Singers I.....	2
MUSC	2325 Diction for Singers II.....	2
MUSC	4610 Vocal Pedagogy.....	2

Music Electives (9 Hrs.)

MUSC	4320 Medieval Period	3
MUSC	4325 Renaissance Period.....	3
MUSC	4330 Baroque Period	3
MUSC	4335 Classic Period	3
MUSC	4340 Romantic Period	3
MUSC	4345 Contemporary Period.....	3
MUSC	4350 Hist and Lit of Jazz	3
MUSC	5410 Hist of Musical Instrum.....	2

University and College Requirements

In addition to the major requirements listed above, students must complete all university and College of Arts and Sciences requirements listed elsewhere in this bulletin. Vocal majors must complete 8 hours of a single, traditional foreign language. A minimum of 48 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Bachelor of Music Education

All music majors must successfully complete 7 semesters of MUSC 0200 Convocation (0 credit, S/U) and must enroll in lessons and one ensemble per semester. Passing the piano proficiency test is required of all music education majors during their sophomore year. Class Piano I-IV is highly recommended for majors with little piano background. Consult your adviser for specific information.

Learning Outcomes

Graduates of the UW Department of Music will develop the skills, concepts, and sensitivities essential to the professional life of a musician (NASM Handbook, p. 85).

At the completion of the Bachelor of Music Education degree, students will be able to: (1) demonstrate skill as solo and ensemble performers who can work as professional educators, (2) demonstrate specific knowledge in music theory, music history, and instrumental and vocal pedagogy to provide a basis for a professional career as a music educator, (3) demonstrate the ability to think, speak, and write clearly and effectively

about the art of music, and (4) demonstrate the pedagogical background and teaching experience to function as effective K-12 music educators.

Music Core

MUSC	0200 Convocation	0
MUSC	1003 Introduction to Music	3
MUSC	1025 Introduction to MusEd	2
MUSC	1030 Written Theory I	3
MUSC	1035 Aural Skills I	1
MUSC	1040 Written Theory II	3
MUSC	1045 Aural Skills II	1
MUSC	2030 Written Theory III	3
MUSC	2035 Aural Skills III	1
MUSC	2040 Written Theory IV	3
MUSC	2045 Aural Skills IV	1
MUSC	2050 Historical Survey I	3
MUSC	2055 Historical Survey II	3
MUSC	1310 PSM:Brass I	1
MUSC	1315 PSM:Brass II	1
MUSC	1320 PSM:Percussion I	1
MUSC	1325 PSM:Percussion II	1
MUSC	1330 PSM:Strings I	1
MUSC	1335 PSM:Strings II	1
MUSC	1340 PSM:Voice	1
MUSC	1345 PSM:Voice II	1
MUSC	1350 PSM:WWinds I	1
MUSC	1355 PSM:WWinds II	1
MUSC	1360 PSM:Guitar	1
MUSC	2395 Piano Proficiency	0
MUSC	3255 Sophomore Perf. Jury	0
MUSC	4070 Conducting	3
MUSC	4155 Senior Music Ed. Recital	0
MUSC	4300 Instrumentation and Arr	3
MUSC	4620 MusEd Practicum	1
Applied Lessons		7
Ensembles		7

Brass, Woodwind and Percussion Emphasis

MUSC	4380 Jazz Techniques	2
MUSC	4750 Marching Techniques	1
MUSC	4780 Instr Conducting	2

Vocal/General Emphasis

MUSC	2320 Diction for Singers	2
MUSC	4790 Choral Conducting	2

String Emphasis

MUSC	**** Secondary String Inst	2
MUSC	4780 Instr Conducting	2

Education College Requirements

EDST	2450 Human Lifespan Dev.	3
EDSE	4000 Practicum	2
EDSE	4254 Pedagogy Music	8
EDCI	4500 Res. in Teaching	16
EDEX	2484 Intro. Special Ed.	3

University and College Requirements

In addition to the major requirements listed above, students must complete all university requirements listed elsewhere in this bulletin. A minimum of 48 hours of the total degree must be at the junior/senior level. Check with your adviser about music courses which fulfill University Studies Program requirements.

Music (MUSC)

Individual Lessons: All students enrolled in MUSC 2080 through MUSC 5670 levels will be required to take a jury examination at the end of the semester to determine, in part, the final grade. (See current fee schedule for listing of fees in individual lessons.)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M24QB]).

0200. Music Convocation. 0. Weekly recital hour for student, faculty and guest performances. *Prerequisite:* intended for, and required of music majors.

Applied Lessons:

1080 through 1270 I. 1-2 (Max. 8).
2080 through 2270 II. 1-4 (Max. 8). *Prerequisite:* previous training proven with an audition or 4 semester hours of MUSC 1080 through MUSC 1270 on the same instrument.

3080 through 3270 III. 1-4 (Max. 8). *Prerequisite:* 4 semester hours of MUSC 2080 through MUSC 2270 on the same instrument.

4080 through 4270 IV. 1-4 (Max. 8). *Prerequisite:* 4 semester hours of MUSC 3080 through MUSC 3270 on the same instrument.

Majors begin at the 2000 level.

- 1080. Baritone Horn I
- 1090. Bassoon I
- 1100. Cello I
- 1110. Clarinet I
- 1120. Double Bass I
- 1130. Flute I
- 1140. French Horn I
- 1150. Guitar I
- 1160. Harp I
- 1170. Oboe I
- 1180. Organ I
- 1190. Percussion I
- 1200. Piano I
- 1210. Saxophone I
- 1220. Trombone I
- 1230. Trumpet I
- 1240. Tuba I
- 1250. Violin I
- 1260. Viola I
- 1270. Voice I

- 2080. Baritone Horn II
- 2090. Bassoon II
- 2100. Cello II
- 2110. Clarinet II
- 2120. Double Bass II
- 2130. Flute II
- 2140. French Horn II
- 2150. Guitar II
- 2160. Harp II
- 2170. Oboe II
- 2180. Organ II
- 2190. Percussion II
- 2200. Piano II
- 2210. Saxophone II

- 2220. Trombone II
- 2230. Trumpet II
- 2240. Tuba II
- 2250. Violin II
- 2260. Viola II
- 2270. Voice II

- 3080. Baritone Horn III
- 3090. Bassoon III
- 3100. Cello III
- 3110. Clarinet III
- 3120. Double Bass III
- 3130. Flute III
- 3140. French Horn III
- 3150. Guitar III
- 3160. Harp III
- 3170. Oboe III
- 3180. Organ III
- 3190. Percussion III
- 3200. Piano III
- 3210. Saxophone III
- 3220. Trombone III
- 3230. Trumpet III
- 3240. Tuba III
- 3250. Violin III
- 3260. Viola III
- 3270. Voice III

- 4080. Baritone Horn IV
- 4090. Bassoon IV
- 4100. Cello IV
- 4110. Clarinet IV
- 4120. Double Bass IV
- 4130. Flute IV
- 4140. French Horn IV
- 4150. Guitar IV
- 4160. Harp IV
- 4170. Oboe IV
- 4180. Organ IV
- 4190. Percussion IV
- 4200. Piano IV
- 4210. Saxophone IV
- 4220. Trombone IV
- 4230. Trumpet IV
- 4240. Tuba IV
- 4250. Violin IV
- 4260. Viola IV
- 4270. Voice IV

- 1000. Introduction to Music. 3. [C34CA] Introduces music appreciation to students who have little or no musical training. Requires attendance at a specified number of public concerts. (Offered every semester)
- 1003. Introduction to University Life as a Music Major. 3. [(none)4I, L] Preparation for study in the Western European classical tradition as represented in most American departments of music, in music of other cultures within American society, in other parts of the world, and in music making after graduation are focused upon. Developing information literacy is an essential component.

1025 [1020]. Introduction to Music Education. 2. Introduces music teacher education. Includes overview of vocal and instrumental music education and teaching processes in grade levels K-12. Requires on-site visits and observations of music programs. (Offered spring semester)

1030. Written Theory I. 3. First semester of a one-year series. Studies fundamentals of music and written harmony.

1035. Aural Theory I. 1. First semester of a one-year series. Studies ear training and sight singing.

1040. Written Theory II. 3. Second semester of a one-year series. Studies fundamentals of music and written harmony. *Prerequisite:* MUSC 1030.

1045. Aural Theory II. 1. Second semester of a one-year series. Studies ear training and sight singing. *Prerequisite:* MUSC 1035.

1280. Accompanying. 1 (Max. 8). Encompasses supervised practice in the art of accompaniment. Discusses traditional usages as applicable to various schools and periods of vocal and instrumental solo literature.

1290. Elementary Class Piano I. 1. Encompasses group instruction for the beginner at the keyboard. First semester of four-semester sequence. Enrollment limited to music or music education majors whose principal performance area is not piano. (Offered fall semester)

1295. Elementary Class Piano II. 1. Continues skills begun in MUSC 1290 including all major scales, beginning minor scales, prescribed chord progressions, harmonization, transposition, sight reading and repertoire. *Prerequisite:* MUSC 1290 or successful completion of final exam requirements for MUSC 1290. (Offered spring semester)

1310. Public School Methods Brass I. 1 (Max. 2). Encompasses group instruction in brass instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1315, 1325, 1335, 1345, 1355. Public School Music Methods. Encompasses group instruction in various applied fields for music education majors. Instruments are supplied. See individual descriptions below.

1320. Public School Methods Percussion I. 1 (Max. 2). Encompasses group instruction in percussion instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1325. Percussion Instruments II. 1 (Max. 2).

1330. Public School Methods Strings I. 1 (Max. 2). Encompasses group instruction in string instruments for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1335. Stringed Instruments II. 1 (Max. 2).

1340. Public School Methods Voice. 1 (Max. 2). Encompasses group instruction in vocal methods for music education majors. *Prerequisites:* MUSC 1040, 1045.

1345. PSM Vocal Methods II. 1. Group instruction in the Vocal Area for Music Education majors. Second semester of vocal methods which focuses on Choral Methods, Children's Choir, Jazz, and Musical Theater in the K-12 teaching situation. *Prerequisite:* MUSC 1340.

1350. Public School Methods Woodwinds I. 1 (Max. 2). Encompasses group instruction in woodwind methods for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1355. Woodwind Instruments II. 1 (Max. 2).

1360. Public School Methods Guitar I. 1 (Max. 2). Encompasses group instruction in guitar for music education majors. Instruments are supplied. *Prerequisites:* MUSC 1040, 1045.

1370, 1375, 1380, 1390, 1400, 1410, 1420, 1430, 1440, 1450, 1460, 1470, 1480, 1490. Ensembles. Maximum of 14 semester hours may be used toward the bachelor's degree from any combination of these courses. Music majors must play in one ensemble each semester in residence.

1370. Marching Band. 1 (Max. 8). Fall semester: marching band.

1375. Symphonic Band.

1380. Wind Ensemble. 1 (Max. 8). [(none)↔CA] *Prerequisite:* players are selected by audition from the university band.

1390. Jazz Ensemble. 1 (Max. 8).

1400. Collegiate Chorale. 1 (Max. 8). [C3↔CA]

1410. Vocal Ensemble. 1 (Max. 12).

1420. Opera Theatre. 1 (Max. 8).

1430. University Orchestra. 1 (Max. 8). [C3↔CA]

1440. Chamber Orchestra. 1 (Max. 8). *Prerequisite:* string players are selected by audition from the University Orchestra.

1450. Percussion Ensemble. 1 (Max. 8).

1460. Brass Ensemble. 1 (Max. 8).

1470. Woodwind Ensemble. 1 (Max. 8).

1480. String Ensemble. 1 (Max. 8).

1490. Piano Ensemble. 1 (Max. 8).

1495. Baroque Ensemble I. 1. Designed to provide students with the opportunity to play on period instruments of the Baroque era. The repertoire will primarily include music of the seventeenth and eighteenth centuries and whose performance will reflect the spirit and style of the period in which the music was composed. *Prerequisite:* consent of instructor.

2040. Written Theory IV. 3. Second semester of a one-year series. Studies chromatic harmony, contrapuntal techniques and 20th century practices. *Prerequisite:* MUSC 2030.

2045. Aural Theory IV. 1. Second semester of a one-year series. Continues MUSC 1035 and 1045. *Prerequisite:* MUSC 2040.

2050. Historical Survey I. 3 (Max. 6). [C3↔CA] First semester of a one-year series. Studies history and literature of music from antiquity through the Baroque. *Prerequisite:* ability to read music.

2055. Historical Survey II. 3 (Max. 6). [C3↔(none)] Second semester of one-year series. Studies history and literature of music from the classical era to present. *Prerequisite:* ability to read music.

2290. Elementary Class Piano III. 1. Third semester of four-semester sequence developing further piano skills for non-pianists. Involves prescribed scales, arpeggios, harmonizations, chord progressions, transpositions, sight-reading and repertoire. *Prerequisite:* MUSC 1295 or successful completion of final exam for MUSC 1295. (Normally offered fall semester)

2295. Elementary Class Piano IV. 1. Final semester of four-semester sequence of piano skills for non-pianists in which the final exam is the departmental piano proficiency exam. *Prerequisite:* MUSC 2290 or successful completion of the final exams for preceding courses. (Normally offered spring semester)

2320. Diction for Singers I. 2. Studies phonetic sounds of English and Italian. (Offered fall semester)

2325. Diction for Singers II. 2. Studies phonetic sounds of French and German. (Usually offered spring semester)

2395. Piano Proficiency. 0. Piano proficiency test is offered at the end of each fall and spring semester. Students may enroll in MUSC2395 a maximum of 3 times. Consult the Music Department Handbook for specific requirements. *Prerequisites:* none.

3015 [2015]. Introduction to the Music of the World's Peoples. 3. [W2, C3, G1↔WB, G] Students develop three primary interconnected literacies for the study and understanding of musics of other cultures: analytical music listening, understanding the concept of music culture, and interpretation of musical events. Student writing is a primary tool for developing these literacies. Texts from the Oxford University Press Global Music Series to study musics of Africa, Indonesia, India, and Eastern Europe are used. Cross listed with ANTH 3015. *Prerequisites:* MUSC 1000 or permission of instructor and WA.

3020. Jazz Theory and Improvisation I. 2. Introduces methods and materials of jazz improvisation. Students will grapple with theoretical concepts as well as practical application of those concepts or selections from standard repertoire. *Prerequisites:* MUSC 1030 and 1035.

3025. Jazz Theory and Improvisation II. 2. Continuation of Jazz Theory and Improvisation I, MUSC 3020. More advanced topics will be covered and more challenging repertoire will be explored. A strong emphasis will be placed on common practice techniques in mainstream jazz. *Prerequisite:* MUSC 3020.

3255. Sophomore Qualifying Performance Jury. 0. An extended performance jury at the end of the sophomore year. Music majors may not continue to 4000 level lessons without successful completion of the sophomore jury. Transfer students with junior standing must take the jury at the end of their first semester in residence. Contact your studio teacher for the individual Sophomore Jury requirements. Students may register for this course up to 2 times. *Prerequisites:* 4 semesters of private instruction, consent of instructor.

3280. Accompanying. 1. Encompasses supervised practice in the art of accompaniment. Discusses traditional usages as applicable to various schools and periods of vocal and instrumental solo literature. *Prerequisites:* audition required; MUSC 1280 or equivalent and junior standing.

3380. Wind Ensemble II. 1 (Max. 8). Preparation and performance in a select concert band of the finest in contemporary and classic wind and percussion repertory. *Prerequisites:* audition required, MUSC 1380 or equivalent and junior standing.

3390. Jazz Ensemble II. 1. Preparation and performance in a select jazz ensemble of the finest in jazz repertory. *Prerequisites:* audition required, MUSC 1390 or equivalent and junior standing.

3400. Collegiate Choral II. 1 (Max. 8). Preparation and performance in a select choir of the finest in choral repertory. *Prerequisites:* audition required, MUSC 1400 or equivalent and junior standing.

3500. Junior Recital. 0. Students will perform a 30 minute (minimum) recital of appropriate repertoire. Consult your studio teacher for individual studio requirements. *Prerequisites:* 4 semesters of private instruction, consent of instructor.

3410. Vocal Jazz II. 1. Preparation and performance in a select choir of the finest in vocal jazz repertory. *Prerequisites:* audition required, MUSC 1410 or equivalent and junior standing.

3430. University Orchestra II. 1 (Max. 8). Preparation and performance in a select symphony orchestra of the finest in orchestral repertory. *Prerequisites:* audition required, MUSC 1430 or equivalent and junior standing.

3450. Percussion Ensemble II. 1 (Max. 8). A chamber music ensemble, performing repertoire which encompasses classical percussion literature, ethnic drumming styles, and steel drum ensemble. Designed for the advanced undergraduate who has normally attained a higher level of technical ability in percussion by their junior/senior year. *Prerequisites:* four semesters of MUSC 1450 or equivalent and junior standing.

3480. String Ensemble: Chamber Music. 1. [(none)↔CA] Designed to provide students with training in the ideal medium of chamber music (small ensembles, such as trio, string quartet, etc.), where they can apply and integrate all elements of their musical knowledge. These include but not limited to rhythm, intonation, tone-production, blend, musical interpretation, concept of style, etc. *Prerequisites:* consent of instructor; MUSC 1480 and junior standing.

3495. Baroque Ensemble II. 1. Designed to provide students with the opportunity to play on period instruments of the Baroque era. The repertoire will primarily include music of the seventeenth and eighteenth centuries and whose performance will reflect the spirit and style of the period in which the music was composed. *Prerequisites:* completion of sophomore barrier exam and consent of instructor.

3500. Junior Recital. 0. Students will perform a 30 minute (minimum) recital of appropriate repertoire. Consult your studio teacher for individual studio requirements. *Prerequisites:* 4 semesters of private instruction, consent of instructor.

4010. Counterpoint. 3. Project-oriented, taught with close instructor supervision. Students absorb basic elements of counterpoint and analyze appropriate examples, taken from samples of contrapuntal works written over past 300 years, then write five contrapuntal works in diverse styles. *Prerequisite:* MUSC 2040.

4020. Jazz Theory and Improvisation III. 2. Continuation of Jazz Theory and Improvisation II, MUSC 3025. Students will learn the harmonic and melodic language of bebop and hard bop through performance and composition of tunes in these idioms. *Prerequisite:* MUSC 3025.

4025. Jazz Theory and Improvisation IV. 2. Continuation of Jazz Theory and Improvisation III, MUSC 4020. Students explore developments in jazz improvisation and composition since 1960. Advanced theoretical concepts are covered in lectures and workshop sessions. *Prerequisite:* MUSC 4020.

4030. Form and Analysis. 3. Encompasses harmonic, thematic, formal and stylistic analysis of selected works representative of various periods. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030 and 2035.

4040. Composition. 2 (Max. 12). Encompasses original work in construction of smaller forms. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisite:* MUSC 4010.

4050. Advanced Studies in World Music. 3. [C3, G1↔(none)] Focuses on music-making and cultures of three musical traditions from around the world. *Prerequisite:* MUSC 3015.

4060. Applied Composition Lessons. 1-2 (max. 12) Students meet on a weekly basis with the instructor and work on individual composition projects and exercises. Students will be required to take a juried portfolio examination at the end

of the semester to determine, in part, the final grade. *Prerequisite:* Previous training proven with a portfolio/audition or MUSC 4040.

4070. Conducting. 3. Examines basic techniques of baton, score reading, familiarization with standard works, practical experience in directing choral and instrumental groups. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030, 2035, 2040 and 2045.

4155. Senior Music Education Recital. 0. Music Education students perform a recital which may be a part of a Convocation or a separate performance. Consult your studio teacher for individual studio requirements. *Prerequisites:* senior standing and studio teacher consent.

4300. Instrumentation and Arranging. 3. Explores instruments of the orchestra and band, as well as arranging for various instrumental and choral combinations. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030 and 2035.

4310. Choral Arranging. 2. Teaches working techniques of arranging for the voice in varied combinations of choral ensembles. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2030 and 2035.

4315 [3000]. America's Ethnic Music. 3. [W2, C3↔CA, D] Surveys music of ethnic groups in America. *Prerequisite:* MUSC 1000.

4320, 4325, 4330, 4335, 4340, 4345. Historical Period Courses. See individual descriptions below.

4320. Medieval Period. 3. [C3, W3↔(none)] Intensely studies Middle Ages musical literature. For graduate credit, students present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4325. Renaissance Period. 3. [C3, W3↔(none)] Encompasses concentrated survey and analysis of Renaissance music. For graduate credit, students must present extra paper or project to be determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4330. The Baroque Period. 3. [C3, W3↔(none)] Studies origins of Baroque literature. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4335. The Classical Period. 3. [C3, W3↔(none)] Encompasses concentrated survey and style analysis of classical period's music. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4340. The Romantic Period. 3. [C3, W3↔CA] Surveys romantic musical literature. For graduate credit, students must present extra paper or project to be determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4345. Contemporary Period. 3. [C3, W3♦ (none)] Surveys styles and composers of contemporary period. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisites:* MUSC 2050 and 2055.

4350. History and Literature of Jazz. 3. [C3♦ (none)] Surveys details of American jazz music from the turn of the century to present. Acquaints students with basic jazz materials, techniques and styles, as well as work of selected jazz masters. For graduate credit, students must present extra paper or project determined by instructor. *Prerequisite:* consent of instructor.

4380. Jazz Techniques. 2 (Max. 2). Surveys jazz structure, styles, techniques and materials with respect to public school music programs. Intended for music education major. *Prerequisite:* MUSC 2035. (Offered spring semester)

4400. Vocal Literature. 1/2-2 (Max. 6). Studies solo materials from Renaissance to present, emphasizing style and interpretation. *Prerequisite:* 4 semester hours of voice.

4500. Directed Independent Study-Undergraduate. 1-2 (Max. 4). *Prerequisite:* consent of department head.

4510, 4520, 4530, 4540, 4550, 4560. Applied Music Methods and Materials. Courses taken in the form of private lessons and subject to similar fees. See individual descriptions below. *Prerequisite:* at least 16 semester hours in one performance field and/or consent of instructor.

4510. Brass Instruments. (\$85 Fee) 1 (Max. 2).

4520. Organ. (\$85 Fee) 1 (Max. 2).

4530. Piano. (\$85 Fee) 1 (Max. 2).

4540. Woodwind Instruments. (\$85 Fee) 1 (Max. 2).

4550. Stringed Instruments. (\$85 Fee) 1 (Max. 2).

4560. Voice. (\$100 Fee) 1 (Max. 2).

4590. Senior Recital. 2 (Max. 4). *Prerequisites:* at least 14 semester hours in one performance field and senior standing.

4600. Piano Pedagogy. 1/2-2 (Max. 3). Includes critical study and evaluation of piano teaching methods and materials. *Prerequisite:* 8 credit hours of piano study.

4610. Vocal Pedagogy. 1/2-2 (Max. 3). Surveys techniques, practices and materials. *Prerequisite:* 8 credit hours of voice. (Offered spring semester)

4615. Instrumental Pedagogy. 0.5-2 (Max. 3) Surveys teaching materials in solo and chamber literature, techniques, practices, and methods for applicable instrument. *Prerequisite:* 8 credit hours of individual study in a specific instrument.

4620. Practicum in Music Education. 1. Provides opportunity to gain experience in music classroom in area public schools. Includes work on meeting educational standards of Wyoming

necessary to begin student teaching and continued work on developing a teaching portfolio. *Prerequisites:* MUSC 1050 and junior status.

4650. Keyboard Literature. 3. An overview of solo ensemble keyboard literature from the 1600s to the present, focusing on major composers and common compositional forms. Includes listening assignments and examinations as well as individual research papers and class presentations. *Prerequisites:* MUSC 2050 and 2055.

4750. Marching Band Techniques. 1. Applies specific various drill design techniques including corps style, military, show band and computer applications.

4780. Instrumental Conducting and Repertory. 2. Applies specific basic conducting techniques to instrumental group rehearsals concerning such problems as intonation, phrasing, dynamics, balance, etc. Overviews appropriate selection procedures for band and orchestral literature. *Prerequisite:* MUSC 4070 and passed piano proficiency requirement.

4790. Choral Conducting and Repertory. 2. Applies specific basic conducting techniques to choral group rehearsals concerning such problems as intonation, good vocal production, phrasing, diction, dynamics, balance, etc. Overviews appropriate choral literature. *Prerequisite:* MUSC 4070 and passed piano proficiency requirement.

4990. Topics in _____ . 1-12 (Max. 12). Encompasses various topics in music. Specific subjects vary from year to year as course is often taught by distinguished visiting artists and lecturers or music faculty. Presents topics of special interest to music majors, graduate students and music educators. Please check class schedule for course titles each semester. *Prerequisite:* consent of instructor.

Philosophy

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Professor:

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Assistant Professor:

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Adjunct Professor:

ROBIN HILL, B.A. University of Wyoming 1975; M.A. University of East Anglia 1978; M.S. University of Arizona 1981; Ph.D. State University of New York at Buffalo 1994; Adjunct Professor in Philosophy 1996.

NANCY H. SHEA, B.S. Northern Arizona University 1975; M.S. University of Nebraska 1977; M.S. Southern Connecticut State University 1979; M.A. University of Massachusetts 1987; Ph.D. 1991; Adjunct Professor in Philosophy 2007.

Professors Emeriti:

James Forrester, Richard L. Howey, James A. Martin

Philosophy starts with those hard questions we all ask at some time or another. Some important questions of meaning and justification can't be answered by making observations or doing experiments. Philosophy is the effort to deal with these problems through sustained, hard, and critical thinking. Philosophy is good preparation for careers that call for you to use your mind, without prejudice but with rigor.

The Philosophy Department offers an undergraduate major, four undergraduate minors, and a graduate MA. For details on each of these programs, see its web site.

Undergraduate Major

A philosophy major must earn a C or better in 11 philosophy courses, including three courses at or above the 4000-level and five additional courses at or above the 3000-level. Our courses fall into four program areas: metaphysics and epistemology; ethics and philosophy of value; logic and philosophy of science; and history of philosophy. In each of these areas, there are two core courses. Philosophy majors choose three of the four distribution areas; they take at least two courses, including a core course, in each of the chosen areas. All prospective majors should take Introduction to Philosophy.

The department allows its majors to concentrate in a number of interdisciplinary areas, and we welcome double-majors in philosophy and another field. Please consult the department's undergraduate adviser to work out a suitable program.

Minor in Philosophy

The minor in philosophy affords students the benefits, both personal and professional, of studying philosophy.

A student minoring in philosophy must earn a C or better in seven philosophy courses, including two at the 4000-level or higher and two more at the 3000-level or higher. The minor program in philosophy uses the same four program areas as the major program. Students take two courses, including at least one core course, in each of two program areas that they choose.

Minor in Ethics

Ethical questions and problems arise in all aspects of life. A minor in ethics can complement and enrich any major field of study.

The minor in ethics consists of six courses, four at the 3000 level or above. A student takes one course in each of these areas: ethical theory; applications; scientific, historical and social analysis, and capstone course. The other two courses are approved electives.

Minor in Environmental Values

The minor in Environmental Values may be added to any bachelor's program at UW. This minor creates a vital link among the natural sciences, humanities, and social sciences through exploration of aesthetics, culture, ethics, and policy.

The minor requires a total of 18 credit hours, including at least one course within each of four areas of concentration. At least 12 of these credits must be outside the primary major, and nine of these credits must be at or above the 3000-level. A three-hour, core course (either PHIL 2330 Environmental Ethics or PHIL 2340 Natural Resource Ethics) is required of all students.

Philosophy (PHIL)

Philosophy majors may not take any philosophy course for S/U credit without written permission from the department head.

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Introduction to Philosophy. 3. [C1↔CH] Introduces critical thinking through a study of elementary logic, scientific method and philosophical problems of ethics, religion, epistemology and metaphysics.

1200. Intellectual Community in Philosophy. 3. [(none)↔I] Introduction to philosophy and critical thinking through a study of philosophical problems of ethics, religion, knowledge and metaphysics. Includes a section on philosophical issues of diversity. Students may not have credit in both PHIL 1000 and 1200.

2100. The Greek Mind. 3. [C1↔CH] Part one of the history of philosophy sequence. The first great age of philosophy was in ancient

Greece. Students read from ancient Greek poets, historians and medical writers, as well as philosophers. The course attempts to understand the Greek mind: what Greeks thought of persons, society and the universe. *Prerequisite:* 3 hours of philosophy.

2200. Social and Political Philosophy. 3. [C1↔(none)] Critically or historically examines philosophical issues arising from the study of society and state. Topics may include the existence and nature of rights; the relation between law and morality; the obligation of citizens to their society; the nature of a just society; and theories of reward and punishment.

2300. Ethics in Practice. 1-3 (Max. 6). [C1↔CH] Alerts preprofessional students and other interested individuals to various ethical issues they will encounter and relevant professional work on those issues. Emphasis of the course concentrates one time on biomedical ethics, another on technology and engineering ethics, another on ethics in the professions.

2310. Philosophy of Religion. 3. [C1↔CH] Systematically examines philosophical questions, arguments and theories arising from study of religion. Topics may include: reason and religion; the existence and nature of God; the character of religious language; and attempts to determine the authenticity of religious experience. *Prerequisite:* 3 hours of philosophy.

2330. Environmental Ethics. 3. [C1↔CH] Introduction to ethical theory in environmental problem cases, and to philosophical issues in environmental philosophy. Ethical theories include natural law, utilitarianism, deontological and rights-based theories, relativism. Topics may include: conservation/preservation, resource management, pollution, overpopulation, factory farming, Leopold's land ethic, deep ecology, holism, eco-feminism.

2345. Natural Resource Ethics. 3. [(none)↔CH, D] Introduction to ethics in context of natural resource extraction, use, conservation, preservation, and distribution. Ethical frameworks include teleological and deontological theories primarily applied to human needs and wants. Concepts and applications of environmental justice are addressed, including private property, sustainability, and obligations to future generations. Cross listed with RNEW 2345.

2420 [1100]. Critical Thinking. 3. [C1↔CH] Shows that argument is a skill of fundamental importance to any field of endeavor. Explains methods used in evaluating an argument. Introduces such topics as: patterns of reasoning, counterexamples, fallacies; inductive and deductive logic.

3000. Special Topics. 3 (Max. 9). [C1↔(none)] Provides undergraduates with the opportunity for in-depth discussion of seminal works in the history of philosophy or a problem in contemporary philosophy not offered in regular

courses or independent study. Open to interested undergraduates from all majors. *Prerequisite:* 3 hours of philosophy.

3100. History of Modern Philosophy: Descartes to Kant. 3. [C1↔(none)] Part two of the history of philosophy sequence. The second great age of philosophy absorbed the influence of the new science during the 17th and 18th centuries. People to be studied include: Descartes, Locke, Spinoza, Leibniz, Berkeley, Hume and Kant. *Prerequisite:* 3 hours of philosophy.

3140. Philosophy of Science. 3. [C1↔(none)] Systematically examines philosophical problems about the nature of science, its methods of explanation, and the status of its laws and theories. *Prerequisite:* 6 hours of physical, biological or social science.

3150. Philosophy of Social Science. 3. [C1↔(none)] Systematically considers the nature, scope and methodology of social sciences. Topics may include the relation between social and natural sciences; the nature of observation and explanation in social sciences; and the role of value in social sciences. *Prerequisite:* 3 hours of philosophy.

3200. Analytical Political Philosophy. 3. A methodical investigation of a small number of central topics of political philosophy, such as political legitimacy and authority, liberty, equality, distributive justice, community. Major positions on these topics, whether by historical or contemporary philosophers, will be critically examined. *Prerequisite:* 3 hours of Philosophy.

3220. Existentialism and Phenomenology. 3. [C1↔(none)] Examines fundamental perspectives of existentialist thought, beginning with its roots in Kierkegaard and Nietzsche. Looks at a large variety of existentialist perspectives presented by Sartre, Heidegger, Buber, Jaspers and Camus. Considers the relation of Husserl's phenomenological method to existentialism. *Prerequisite:* 3 hours of philosophy.

3250. Global Justice. 3. An examination of global justice, normative international relations, and international ethics, using the methodology and theories of analytical political philosophy. Possible topics include global economic justice and world poverty, human rights, humanitarian duties, intervention and sovereignty, cosmopolitanism, nationalism, patriotism, world hunger, and immigration. *Prerequisite:* 3 hours of philosophy or international studies.

3300. Ethical Theory. 3. [C1↔(none)] A philosophical investigation of such concepts as morality, obligation, goodness, freedom and responsibility, and of recurring types of ethical theory. *Prerequisite:* 3 hours of philosophy.

3320. Eastern Thought. 3. [C1, G1↔(none)] Surveys some of the major concepts in Zen, Hinduism, Buddhism, Taoism and Confucianism. *Prerequisite:* 3 hours of philosophy.

3340 [2340]. Philosophy in Literature. 3 (Max 6). [C1♦(none)] Examines central themes in literary works with philosophical significance; studies related general issues. Authors studied may include Aristotle, Dostoyevski, Kafka, ee cummings, Grass, Mann, Pound, Rilke, Camus, and Sartre. Issues include questions of interpretation, criticism, and translation, as well as the possibility of direct philosophical influence on authors. Cross listed with ENGL 3340. *Prerequisites:* one course in philosophy and one course in literature or criticism in the English department.

3350. History of Moral Philosophy. 3. [C1♦(none)] A historical and philosophical overview of ethical theory ranging from ancient Greek ethics to the present. *Prerequisite:* 3 hours of philosophy.

3420. Symbolic Logic. 3. Studies both propositional and quantificational logic, concentrating on methods of proof. Takes up such topics as identity, singular terms, intuitive set theory, and translating English sentences into symbolic notation. *Prerequisites:* 3 hours of philosophy

3440. Philosophy of Mind. 3. [C1♦(none)] Considers topics in philosophy of mind, including the mind-body problem, emotions, attitudes, perception and psychological explanation. *Prerequisite:* 3 hours of philosophy.

3500. History of Science. 3. [C1, G1♦(none)] Historic and philosophic survey of the development of science from the ancient Greeks to the 20th century. *Prerequisites:* 3 hours of laboratory science and 3 hours of philosophy.

3510. Introduction to Epistemology. 3. Systematic introduction to epistemology, the philosophical study of knowledge and justified belief. Aims to answer questions such as: What are the necessary and sufficient conditions of knowledge? What are its sources? What is its structure, and what are its limits? How we are to understand the concept of justification? *Prerequisite:* 3 hours of philosophy.

3560. Introduction to Metaphysics. 3. A systematic introduction to metaphysics, the branch of philosophy concerned with providing a comprehensive account of the most general features of reality as a whole. Of central importance is the study of ontology, which seeks to address the question of what general sorts of things exist: particulars, universals, propositions, numbers, minds. *Prerequisite:* 3 hours of philosophy.

4000. Philosophical Issues. 1-3 (Max. 6). Dual listed with PHIL 5000. *Prerequisite:* consent of instructor.

4020. Plato. 3. Detailed examination of selected dialogues of Plato. Dual listed with PHIL 5020. *Prerequisite:* 12 hours of philosophy including PHIL 2100.

4030. Aristotle. 3. Detailed examination of selected works of Aristotle. Dual listed with PHIL 5030. *Prerequisite:* 12 hours of philosophy including PHIL 2100.

4040. Kant. 3. An examination of one or more aspects of the work of Immanuel Kant, conducted either from the perspective of the history of philosophy, or predominantly as a critical study. Dual listed with PHIL 5040. *Prerequisite:* 12 hours of philosophy including PHIL 3100.

4110. Figures in Contemporary Philosophy. 3-6 (Max. 6). An advanced study of the work of one, or several related, contemporary philosophers. Dual listed with PHIL 5110. *Prerequisite:* 12 hours of philosophy including PHIL 3100.

4120 [4100]. Philosophy and the 20th Century. 3. [W3♦(none)] Part three of the history of philosophy sequence. Covers the third great age of philosophy. Studies the main ways in which philosophy has been done since 1900. Topics normally include logic and philosophy, Wittgenstein, logical positivism and current trends. Dual listed with PHIL 5120. *Prerequisites:* PHIL 4120/5120, PHIL 4120; 12 hours of philosophy including either PHIL 2100 or 3100.

4140. Topics in Philosophy of Science. 3 (Max. 6). [W3♦(none)] Encompasses selected topics in philosophy of science. Dual listed with PHIL 5140. *Prerequisite:* 12 hours of philosophy including PHIL 3140; PHIL 2220 is recommended.

4190. Philosophy of Language. 3-6 (Max. 6). An advanced study of the work of one, or several related, contemporary philosophers. Dual listed with PHIL 5190. *Prerequisite:* 12 hours of philosophy including PHIL 4510 or 4560.

4215 [4200]. Topics in Social and Political Philosophy. 3 (Max. 6). [W3♦(none)] Advanced study of such topics as property rights, alternative theories of the state and other social organizations, and concepts of the nature of man. Topics might be approached either historically or analytically. Dual listed with PHIL 5215. *Prerequisite:* 12 hours of philosophy including PHIL 3200.

4300. Topics in Ethics. 3-6 (Max. 6). An advanced investigation of selected topics in ethics. Examples include derivative and basic principles of obligation; justice; morality and utility; generalization of norms; and the relation of morality and law. Dual listed with PHIL 5300. *Prerequisite:* 12 hours of philosophy including PHIL 3300 or 3350.

4340. Issues in Environmental Ethics. 3. Encompasses selected topics in environmental and natural resource ethics. Cross listed with RNEW 4340. Dual listed with PHIL 5340. *Prerequisites:* PHIL 2330, 2340, 3300 or 3350.

4420. Advanced Logic. 3. Studies advanced topics in mathematical logic. Takes up such topics as: uninterpreted calculi and the distinctive contributions of syntax and semantics; metatheory, including completeness and consistency proofs; modal logic and semantics; logic as a philosophical tool. Cross listed with COSC/MATH 4420. *Prerequisite:* PHIL 3420 or equivalent.

4440. Topics in Philosophy of the Mind. 3-6 (Max. 6). An advanced study of problems in the philosophy of mind such as the concept of human action; intention, choice, reasons and causes in the explanation of human action, mental states and brain states, and artificial intelligence. Dual listed with PHIL 5440. *Prerequisite:* 12 hours of philosophy including PHIL 3440.

4510. Theory of Knowledge. 3. [W3♦(none)] Studies such problems as knowledge and belief, skepticism, perception and knowledge, memory, truth and justification of induction. Dual listed with PHIL 5510. *Prerequisite:* 12 hours of philosophy including PHIL 3100 and 4100.

4560. Metaphysics. 3. [W3♦(none)] Examines approaches to metaphysics. Discusses problems such as causality, individuation and the distinction between particulars and universals. Dual listed with PHIL 5560. *Prerequisites:* 12 hours of philosophy including PHIL 3100 and 4100.

Physics

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FAX: (307) 766-2652

Web site: physics.uwyo.edu

Department Head: Paul E. Johnson

Professors:

YURI DAHNOVSKY, Institute of Chemical Physics, Moscow 1983; Professor of Physics 2007, 2000.

PAUL E. JOHNSON, B.S. Davidson College 1973; M.S. University of Washington 1977; Ph.D. 1979; Head of the Department of Physics and Astronomy 1997; Professor of Physics and Astronomy 1993, 1981.

JINKE TANG, B.S. Jilin University 1982; M.S. Iowa State University 1990; Ph.D. 1998; Professor of Physics 2007.

Associate Professors:

MICHAEL S. BROTHERTON, B.S. Rice University 1990; M.A. University of Texas at Austin 1992; Ph.D. 1996; Associate Professor of Physics and Astronomy 2009, 2002.

RONALD W. CANTERNA, B.A. Colgate University 1968; Ph.D. University of Washington 1976; B.S. University of Wyoming 1982; Associate Professor of Physics and Astronomy 1990.

DANIELA A. DALE, B.S. University of Minnesota 1993; M.S. Cornell University 1996; Ph.D. 1998; Associate Professor of Physics and Astronomy 2005, 2001.

HENRY A. KOBULNICKY, B.S. University of Iowa 1991; M.S. University of Minnesota 1993; Ph.D. 1997; Associate Professor of Physics and Astronomy 2009, 2002.

MICHAEL J. PIERCE, B.S. University of Oklahoma 1980; M.A. University of Hawaii 1983; Ph.D. 1988; Associate Professor of Physics and Astronomy 2005, 2001.

Assistant Professors:

ADRIAN E. FEIGUIN, M.S. Universidad Nacional de Rosario, Argentina 1994; Ph.D. 2000; Assistant Professor of Physics 2009.

WENYONG WANG, B.S. Nankai University 1993; M.S. Yale University 1999; Ph.D. 2004; Assistant Professor of Physics 2008.

Academic Professional Lecturers:

RUTGER MICHALAK, Dipl. Phys FZ Julich 1989; Ph.D. 1993; Academic Professional Lecturer in Physics and Astronomy 2007, 2004.

DAVID R. THAYER, B.S. University of Miami 1977; Ph.D. Massachusetts Institute of Technology 1983; Academic Professional Lecturer in Physics 2002.

Assistant Lecturer:

EDWARD KONCEL, B.S. Portland State University 1969; M.S. University of Wyoming 1988; Ed.D. 1992; Assistant Lecturer in Physics and Astronomy 1999.

Adjunct Professors:

Bianchini, Marquard

Professors Emeriti:

Walter T. Grandy, A. Raymond Kunselman, Glen A. Rebka, Terry P. Roark, James M. Rosen, Lee H. Schick

Physics originated in antiquity as the study of natural philosophy. As such, it attempts to describe the universe within the context of both physical laws and the fundamental particles of nature. The broad scope of physics runs from the microscopic nuclear structure and that of the elementary particles themselves to the macroscopic, the galaxy and evolution of the universe as a whole. Today the subject is generally divided into broad areas such as solid-state, nuclear, elementary particles, astrophysics, etc. The department maintains competence in most major branches of physics and offers instruction in these areas at both the undergraduate and graduate levels. In addition, it has a strong interest and involvement in science education.

Degrees Offered

The Bachelor of Science degree, both with a major in physics and in the professional curriculum, is offered, as well as the Master of Science and Doctor of Philosophy. A description of the graduate program is found in the *Graduate Bulletin*.

The department also offers a variety of courses which satisfy physical science requirements of University Studies and the requirements of the College of Education in its preparation of physical science teachers.

Undergraduate Curriculum

The four-year physics programs are the Bachelor of Arts in physics, Bachelor of Science in physics, and the Bachelor of Science in physics plus. The Bachelor of Science programs are intended for students who will pursue a career or a graduate degree in the field, whereas the Bachelor of Arts program is primarily geared toward those who are interested in pursuing physics as a second major. The department also offers a Bachelor of Science degree in Astronomy and Astrophysics.

Bachelor of Science Major Program

Students in the Bachelor of Science in Physics major program are required to complete the following courses:

- PHYS 1310, 1320, 2310, 2320, 4210, 4310, 4410, 4420, 4510, 4840, and 3 hours of PHYS 4970;
- Students are required to take at least 3 hours of electives from any PHYS 4000- or 5000-level course
- MATH 2200, 2205, 2210, 2250, 2310, 4230, and 4440
- COSC 1030 and CHEM 1020
- Either ES 2210 or PHYS 3650

Bachelor of Arts Major Program

Students in the Bachelor of Arts in physics major program are required to complete the following courses:

- PHYS 1310, 1320, 2310, 2320, 4210, 4310, 4410, 4510
- Students are required to take at least 3 hours of electives from any PHYS 4000- or 5000-level course.
- MATH 2200, 2205, 2210, 2310
- COSC 1010 and CHEM 1020 and ES 2210

Physics Plus Curriculum

Students preparing for strictly technological careers and hence want heavily technological undergraduate educations, may select the physics plus curriculum. This program enables students to concentrate in physics, mathematics and an elected technical area with some sacrifice in the breadth of general education.

Students in the Physics Plus program are required to complete the following courses:

- PHYS 1210 or 1310, 1220 or 1320, 2310, 2320, 4210, 4310, 4410, 4510, 4840, and 3 hours of either PHYS 4970 or research in their elected technical area
- MATH 2200, 2205, 2210, 2250, and 2310
- PHYS 4830 or both MATH 4230 and 4440
- Either ES 2210 or PHYS 3650
- COSC 1030 and CHEM 1020
- A coherent program of 27 credits in a technical area approved by the department head

Examples of an elected technical area could be an area involving additional physics and mathematics; physics, mathematics, and astronomy; engineering; biological sciences; chemistry; computer science; mathematics; geophysics; atmospheric science; economics; business; education or technical writing. Further details are available from the department's web site.

Minor Program

- A&S students seeking a minor in A&S must have 12 hours exclusive to the minor and not used in the major
- Complete one of the following: PHYS 1210, 1310
- Complete one of the following: PHYS 1220, 1320
- Complete PHYS 2310 and 2320
- Complete at least two of the following: PHYS 4210, 4410, 4510, and/or 4310

Physics (PHYS)

(See also Astronomy)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1050. Concepts of Physics. 4. [S2↔SP] Introduces the physical world. For students whose background in math and science is minimal; recommended for students in paramedical sciences and medical technology. Three lecture hours per week are supplemented by two hours per week of laboratory work. *Prerequisite:* MATH 1000 or passing the Mathematics Placement Examination at Level 3. (Normally offered both semesters)

1090. The Fundamentals of the Physical Universe. 4. [S2↔SP] Applies fundamental principles of chemistry and physics to real life situations. Primarily for elementary education majors. *Prerequisites:* Math Level 3 or MATH 1000 and major in elementary education. (Normally offered fall, spring and summer)

1110. General Physics I. 4. [S2↔SP] First course of two-semester sequence. Introduces elementary college physics without calculus. Primarily for premedical, pre dental, preoptometry, prephysical therapy and other students requiring insight into workings of the physical world. Includes classical mechanics, gravitation and heat. Laboratory sessions will illustrate principles studied. Students receiving credit for PHYS 1110 cannot receive credit for PHYS 1050, 1210 or 1310. *Prerequisite:* MATH 1450, 1405 or equivalent. (Normally offered fall semester)

1120. General Physics II. 4. [M3↔SP] Follows PHYS 1110 and completes introduction to physics without calculus. Includes electricity, magnetism, optics and modern physics. Laboratory sessions illustrate principles studied. Students receiving credit in PHYS 1120 cannot receive credit in PHYS 1050, 1220 or 1320. *Prerequisite:* PHYS 1110. (Normally offered spring semester)

1210. Engineering Physics I. 4. [S2↔SP] First course of a two-semester sequence. Provides introduction to physics with calculus for engineering students. Includes classical mechanics, gravitation and heat. Laboratory sessions illustrate principles studied. Students receiving credit for PHYS 1210 cannot receive credit for PHYS 1050, 1110 or 1310. *Prerequisites:* a grade of C or higher in MATH 2200 and concurrent enrollment in MATH 2205.

1220. Engineering Physics II. 4. [M3↔SP] Follows PHYS 1210 and continues introduction to physics with calculus for engineering students. Includes electricity, magnetism and optics. Laboratories illustrate principles studied. Students receiving credit for PHYS 1220 cannot receive credit for PHYS 1050, 1120 or 1320. *Prerequisites:* grades of C or higher in PHYS 1210, MATH 2200, 2205 and concurrent enrollment in MATH 2210.

1310. College Physics I. 4. [S2↔SP] First course of two semester sequence. Provides thorough introduction to physics with calculus. Primarily for majors in physics, astronomy, astrophysics and other areas in science, mathematics and technology requiring the highest levels of sophistication. Includes classical mechanics, gravitation and thermodynamics. Laboratory sessions illustrate principles studied and meaning of physical measurement. Students receiving credit for PHYS 1310 cannot receive credit for PHYS 1050, 1110 or 1210. *Prerequisites:* MATH 2200 and concurrent enrollment in MATH 2205. (Normally offered fall semester)

1320. College Physics II. 4. [M3↔SP] Follows PHYS 1310 and continues introduction to physics with calculus. Includes electricity, magnetism and optics. Laboratory sessions illustrate principles studied and meaning of physical measurement. Students receiving credit for PHYS 1320 cannot receive credit for PHYS 1050, 1120 or 1220. *Prerequisites:* PHYS 1310, MATH 2200, 2205 and concurrent enrollment in MATH 2210. (Normally offered spring semester)

2150. The Physical Principles of Contemporary Social Problems. 3. [C2, G1↔(none)] Introduces technical basis of several important social problems including pollution, transportation, radiation, nuclear weapons and medical technology. *Prerequisite:* PHYS 1110 or consent of the instructor.

2310. Physics III: Waves and Optics. 4. Third-semester course primarily for majors in physics, astronomy, engineering, mathematics, and other sciences. Includes Gaussian Optics and matrix calculations, wave equations, interference, superposition principle, elementary Fourier Analysis, Fraunhofer and Fresnel Diffraction, application to optical instruments. *Prerequisite:* PHYS 1220 or 1320 or equivalent. (Normally offered fall semester)

2320. Physics IV: Modern Physics. 3. Fourth semester course primarily for majors in physics, astronomy, engineering, mathematics, and other physical sciences. Topics include introduc-

tory quantum mechanics, nuclear and particle physics, lasers, Planck's Blackbody Radiation, photoelectric effect, electron diffraction, wave-particle duality, deBroglie Wavelength, Bohr Atom, Heisenberg Uncertainty Principle, Schrodinger Equation, and Einstein's Special Theory of Relativity. *Prerequisite:* PHYS 1220 or 1320 or equivalent. (Normally offered spring semester)

2330. Modern Physics Laboratory. 1. Provides experimental background needed by physics majors taking lecture course PHYS 2310. Students perform experiments crucial in birth of modern atomic and molecular physics, nuclear physics and solid-state physics. *Prerequisites:* PHYS 1320, MATH 2210, PHYS 2310 concurrently and physics or astronomy major.

2870. Special Topics in _____. 1-4 (Max. 4). Presents various subjects not available in regularly scheduled courses. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

3100. Application of Physics in the Modern World. 4. Presents a broad overview of physics concepts and their application to selected topics of current interest such as atmospheric pollution, nuclear radiation and medicine, and nuclear weapons. *Prerequisite:* 12 hours university-level biological, physical and/or earth sciences.

3333. Fission, Fusion and Psychosis. 3. [C1↔(none)] Multidisciplinary examination of the atomic bombings of Japan. World War II developments will place the atom in the multiple perspectives of military strategy, technology, humanistic values, hegemony and post-war developments. Non-science majors are particularly encouraged to enroll. *Prerequisite:* junior standing.

3650. Optics/Electronics Lab I. 4. [W3↔(none)] Presents fundamentals of applied optics and electronics in a project-oriented interactive undergraduate laboratory. Students will participate in group projects, building and using laboratory instrumentation in a realistic research laboratory environment. The first course of a two laboratory sequence. *Prerequisites:* PHYS 1220 or 1320, PHYS 2310.

4000. Applied Laser Science. 3. Covers basic operational principles of lasers and their many applications in science and industry. *Prerequisites:* PHYS 2310 or equivalent; PHYS 4310. (Offered based on sufficient demand and resources)

4050. The Physical Principles of Pollution. 2. Serves educators and other interested persons, covering technical basis of several forms of pollution: radiation, atmospheric, noise and water. Requires mathematics at the level of exponential manipulations, simple trigonometry and geometry. *Prerequisite:* college physics course. (Offered based on sufficient demand and resources)

4140. Practical Modern Electronics. 2. Laboratory in practical electronics for non-physics majors. Initial sessions familiarize students with multimeters, oscilloscopes and basic electrical components. Remaining sessions build practical devices using modern integrated circuits. Does

not count toward physics major. *Prerequisite:* PHYS 1050, 1120. (Offered based on sufficient demand and resources)

4150. Energy in a Technical Society. 3. [C2, G1↔(none)] Introduces students to technical basis of energy production and consumption. Focuses on meeting world's energy needs in year 2100. *Prerequisite:* PHYS 1210.

4160. Energy Issues for Educators. 2. Serves educators and other interested persons. Covers history, technologies, resources and future needs of energy with reference to the world's energy needs in the year 2100. Requires mathematics at the level of exponential manipulations, simple trigonometry and geometry. Introduces concepts of elementary probability theory. *Prerequisite:* college physics course. (Offered based on sufficient demand and resources)

4210. Classical Mechanics I. 3. First semester of a two-course sequence. Presents classical mechanics at intermediate level. Begins with elementary Newtonian mechanics and builds step by step into analytic mechanics. Includes simple harmonic motion of particles in one, two or three dimensions, gravitation; introduction to rigid-body motion; and introduction to Lagrangian and Hamiltonian Mechanics. *Prerequisites:* PHYS 2310 or equivalent, MATH 2210 or equivalent. (Normally offered spring semester)

4220. Classical Mechanics II. 4. Follows PHYS 4210. Presents classical mechanics at an intermediate to advanced level. Includes detailed treatment of Lagrangian and Hamiltonian Mechanics, rigid-body motion, small oscillations and introduction to relativity. Dual listed with PHYS 5220. *Prerequisite:* PHYS 4210.

4310. Quantum Mechanics. 3. Studies fundamental concepts of quantum theory. *Prerequisite:* PHYS 4210. (Normally offered fall semester)

4340. Semiconductor Materials and Devices. 3. Physical properties of semiconductor materials and devices, including crystal lattices and energy bands, carrier generation, transport, and recombination. PN, metal-semiconductor, and heterojunction operation. Field Effect Transistors, including Metal Oxide Semiconductor (MOSFET), Junction (JFET), Metal Semiconductor (MESFET), and High Electron Mobility (HEMT) transistors. Bipolar Junction (BJT) and Heterojunction (HBT) Transistor operation. Cross listed with EE 4340. *Prerequisite:* PHYS 1220 or 1320.

4350. Atomic and Molecular Physics. 3. Illustrates practical applications of quantum mechanics, such as interpretation of atomic and molecular spectra; measurements with atomic and molecular beams; microwave spectra; nuclear and electronic paramagnetic resonance; optical pumping measurements; and laser operation. *Prerequisites:* PHYS 4210, 4310, 4420 and MATH 4440. (Normally offered spring semester)

4410. Electricity and Magnetism I. 3. First semester of a two-course sequence. Presents electricity and magnetism on intermediate level, emphasizing fields. Begins with review of vector algebra and calculus and proceeds to discussion of electrostatics, potential theory and steady currents. *Prerequisites:* PHYS 2310 or equivalent and MATH 2210. (Normally offered fall semester)

4420. Electricity and Magnetism II. 3. Follows PHYS 4410 and continues intermediate discussion of electricity and magnetism. Covers magnetostatics, magnetoquasistatics, alternating currents, electromagnetic waves, transmission lines and antennae. *Prerequisite:* PHYS 4410. (Normally offered spring semester)

4510. Thermodynamics and Statistical Mechanics. 3. Presents fundamental principles of thermodynamics, emphasizing mathematical development. *Prerequisites:* PHYS 4310 or equivalent and MATH 2210. (Normally offered spring semester)

4690. Science: Fact, Fiction and Future. 3. [(none)♦CH, WC] Examines a number of concepts related to the scientific method. How science "works" is investigated within six topic areas: What is Science?, The Nature of the Scientific Method, Science Fact?, Science Fiction, Science of the Future and Case Studies of the Application of the Scientific Method. *Prerequisites:* completion of at least one lower-division science course and successful completion of a WB course or permission of instructor.

4710. Solid-State Physics. 3. Surveys theory and application of solid state physics using quantum theory. Emphasizes relation between theory and experiment. Discusses areas of present research activity. *Prerequisites:* PHYS 4310 and 4510. (Normally offered spring semester)

4830. Mathematical and Computational Physics I. 3. First semester of a two-semester sequence. Provides a comprehensive overview of mathematical physics and numerous analytical mathematical techniques applied to physics problems. Topics include: numerical computations and visualizations, differential and integral vector analysis, linear algebra, infinite series, complex variables, partial differential equations, ordinary differential equations, integral transforms and equations, and calculus of variations. *Prerequisites:* PHYS 2310 or PHYS 2320 and MATH 2210.

4840. Mathematical and Computational Physics II. 3. Second semester of a two-semester course. Provides a comprehensive overview of computational physics and provides numerous numerical techniques applied to physics problems. Topics include: numerical computations and visualizations, numerical solutions of ordinary differential equations, linear systems, curve fitting, discrete Fourier transforms, partial differential equations, integration, and Monte Carlo simulations of general stochastic systems. *Prerequisite:* PHYS 4830.

4860. Independent Study in _____. 1-6 (Max. 12). Encompasses independent study to advanced problems which may involve either library and/or laboratory research. *Prerequisite:* PHYS 2310. (Offered based on sufficient demand and resources)

4870. Special Topics in _____. 1-6 (Max. 12). Presents various subjects not available in regularly scheduled courses. *Prerequisites:* PHYS 2310 and consent of instructor. (Offered based on sufficient demand and resources)

4970. Senior Research/Internship. 1-3 (Max. 4). Requires a practical research experience or internship from the student up to 4 credits under the advisement of a faculty member. This requirement for graduation should lead to a professional publication or document written by the student. The credit requirements may be spread over several semesters.

Political Science

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Department Head: James D. King

Professors:

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WINBERG CHAI, B.A. Wittenberg College 1955; M.A. New School for Social Research 1958; Ph.D. New York University 1968; Professor of Political Science 1988.

LARRY HUBBELL, B.A. American University 1973; M.A. University of Illinois-Chicago 1974; Ph.D. Virginia Polytechnic Institute and State University 1989; Professor of Political Science 2000, 1989.

JAMES D. KING, B.A. Michigan State University 1974; M.A. Western Michigan University 1977; Ph.D. University of Missouri-Columbia 1983; Professor of Political Science 1999, 1992.

MARGARET M. MURDOCK, B.A. Creighton University 1970; M.A. Tufts University 1975; Ph.D. 1978; Professor of Political Science-Casper 1993, 1975.

STEPHEN C. ROPP, B.A. Allegheny College 1963; M.A. University of Washington 1965; Ph.D. University of California at Riverside 1971; Professor of Political Science 1984.

OLIVER WALTER, B.A. Washington State University 1964; M.A. 1966; Ph.D. University of Illinois 1972; Dean of the College of Arts and Sciences 1989; Professor of Political Science 1981, 1970.

Associate Professors:

JEAN A. GARRISON, B.A. University of Wyoming 1990; M.A. University of South Carolina 1992; Ph.D. 1996; Associate Professor of Political Science, 2004, 2001.

BRENT L. PICKETT, B.A. Wichita State University 1989; M.A. University of Colorado at Boulder 1991; Ph.D. 1995; Associate Professor of Political Science - Casper 2005.

ROBERT A. SCHUHMAN, B.S. Appalachian State University 1987; M.P.A. 1989; Ph.D. Virginia Polytechnic Institute and State University 1995; Associate Professor of Political Science 2002, 1995.

Assistant Professors:

STEPHANIE B. ANDERSON, B.S.F.S. Georgetown University 1989; M.Sc. The London School of Economics and Political Science 1990; Ph.D. University of Cambridge 1996; Assistant Professor of Political Science 2005.

A. J. BARGHOTHI, B.A. Appalachian State University 1995; M.A. 1997; Ph.D. University of South Carolina 2009; Assistant Professor of Political Science 2009.

TEENA J. GABRIELSON, B.A. Macalester College 1992; M.A. University of California - Davis 1997; Ph.D. 2002; Assistant Professor of Political Science 2006.

ANDREW D. GARNER, B.S. Kennesaw State University 2002; Ph.D. University of Mississippi 2007; Assistant Professor of Political Science 2008.

TRACY A. SKOPEK, B.A. University of Texas 1992; M.P.A. Texas Tech University 1995; Ph.D. 2000; Assistant Professor of Political Science 2003.

Professor Emeritus:

Michael J. Horan

Associate Professor Emeritus:

Alan E. Schenker

Political Science is the study of how societies govern themselves and interact with one another. Courses of instruction in the Department of Political Science are divided into five subfields: American politics, comparative government, international relations, political philosophy, and public law. Areas of focus include analysis of government structures and processes, citizens' influence on government, policy content, philosophical traditions, political systems of other nations, and resolution of conflicts between nations. Our goals are to help students better understand political processes, and to develop the critical thinking and analytic skills necessary for effective participation in the political process and successful careers in the public and private sectors or further study in law, political science, and public administration.

In a general sense, courses offered by the department provide the basis for both a liberal undergraduate education and later graduate-level study in political science and/or public administration.

In 1925, the state legislature passed a law requiring the study of the U.S. and Wyoming Constitutions by all University of Wyoming students. Political Science 1000 satisfies this requirement, but it may also be satisfied by special examination given periodically by the Department of Political Science.

The political science department offers to undergraduates the following programs: (1) a major curriculum leading to either a B.A. or B.S. degree; (2) minor curricula; (3) courses which fulfill part of the general education requirements of the College of A&S; (4) fulfillment of statutory provision which requires study of U.S. and Wyoming Constitutions by all university students; (5) courses that fulfill part of the University Studies Program requirement.

Learning Outcomes

Specific objectives of the Political Science undergraduate curriculum have been identified as the following learning outcomes. We continuously and actively assess our program to ensure that these learning outcomes are being met for each of our graduates. Student learning objectives/outcomes:

1. Acquire a knowledge and understanding of the values, beliefs, and institutions that constitute the political tradition of the American political system, of other political systems, and of patterns of interactions among nations and sources of international conflict and cooperation;
2. Evaluate conflicting arguments, assemble and present empirical evidence, and make reasoned conclusions from the evidence available;
3. Communicate effectively, both orally and in written form.

Graduate Degrees

The department offers programs leading to an M.A. and M.P.A. degree. For further information, please consult the *Graduate Bulletin*.

Undergraduate Major

In addition to the university and college requirements listed elsewhere in this bulletin, a major in political science requires 33 hours. Political Science 1000, the university requirement, does not count as part of the 33. All students must take POLS 2460, preferably in the sophomore year. Other 1000- and 2000-level classes should also be completed prior to the beginning of the junior year. Students are required to complete at least one class in each of the other four political science subfields: American politics, comparative government, international relations, and public law. A maximum of 6 hours of internship credit may be applied towards the 33 hours required for the political science major. Finally, at least one seminar is required. With the exception of POLS

1000, only those political science courses in which a grade of C or better has been earned may be used to satisfy departmental requirements.

Most university studies courses should be completed prior to the junior year. Additional information about the political science major may be obtained from the Department of Political Science office, 136 A&S Building.

Undergraduate Minors

The department offers optional undergraduate minors in American politics, international relations and comparative government, public law and political theory. Eighteen hours are required in each minor, including 9 hours of upper-division courses and one seminar (excluding POLS 1000). A maximum of 3 hours of internship credit may be applied towards the 18 hours required for the political science minor. At least 12 credit hours in a minor must be from courses *not* being counted toward the student's major. Information relating to specific courses fulfilling minor requirements may be obtained from the Department of Political Science office, 136 A&S Building.

Teacher Education

Teacher certification is available through the College of Education for the political science major. Further information may be found under the College of Education in this bulletin.

Major or Minor in Environment and Natural Resources

The Haub School of Environment and Natural Resources (ENR) offers a second major or minor for students interested in interdisciplinary training in the policy, legal, economic, scientific, ethical, and other perspectives associated with ENR challenges. The Haub School uses problem-based learning and interdisciplinary team teaching. Students of all disciplines are welcome to take classes in ENR or add ENR to their degree program. Contact the Haub School at (307) 766-5080, senr@uwo.edu, or www.uwo.edu/enr.

Political Science (POLS)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. American and Wyoming Government. 3. [V1↔V] Introduction to the Constitutions and governmental processes of the U.S. and Wyoming. (Offered each semester)

1100. Wyoming Government. 1. Introduction to the Constitution and governmental process of Wyoming. Intended for students who have earned credit for American Government at an out-of-state college or by Advance Placement but have not fulfilled the Wyoming Constitution requirement of University Studies.

1111. Issues in Political Science. 1-3 (Max. 3). [(none)↔I, L] Introduces students to Political Science through a study of a contemporary issue or problem from the perspectives of the various subfields.

1200. Non-Western Political Cultures. 3. [C2, G1↔CS, G] Gives students appreciation of non-western political cultures and how these cultures have created different political institutions and practices. Consists of three case studies of non-western nations selected from China, India, Japan, Saudi Arabia, Tanzania and Russia. Cross listed with INST 1200. (Offered each semester)

2000. Current Issues in American Government. 3. [C2↔CS] Examines current political topics in the U.S. Focuses on key public policy problems, policy-making process and the final policy choice. Students must keep abreast of political events on daily basis and apply basic concepts in American government to current affairs. *Prerequisite:* POLS 1000.

2070. Politics of State and Local Government. 3. [C2↔(none)] Studies politics, organizations, structures and processes of American state and local governments. *Prerequisite:* POLS 1000.

2200. Politics of Europe and the European Union. 3. [C2, G1, W2↔(none)] Examines formal and informal aspects of politics in European Countries and the European Union.

2290. Governments and Politics of Latin America. 3. Studies chief cultural and historical factors influencing Latin American political process. Surveys major institutions and political patterns of the region.

2300. World Politics in the Post-Cold War Era. 3. [G1↔G] Examines changes that have taken place since the end of the Cold War in perspectives of major world powers, global and regional power balances, patterns of conflict and cooperation and the structure of the world system. Focuses on what these changes portend for the future. Cross listed with INST 2300.

2310. Introduction to International Relations. 3. [W2↔G] Analyzes nature of international relations, emphasizing various methods of explaining and interpreting international behavior of nation-states. Illustrates contemporary problems of world politics. Cross listed with INST 2310. (Normally offered once a year)

2330. Environmental Ethics. 3. [C1↔(none)] Introduces students to ethical theory in environmental problem cases, and to philosophical issues in environmental philosophy. Ethical theories include natural law, utilitarianism, deontological and rights-based theories, relativism. Topics may include: conservation/preservation, resource management, pollution, overpopulation, factory farming, Leopold's land ethic, deep ecology, holism, eco-feminism. Cross listed with PHIL 2330.

2410. Introduction to Public Administration. 3. Deals with executive branches of governments in the U.S.: national, state and local. Considers organizational, political and policy-making aspects of each. Discusses administration in other forms of government, such as interstate compacts and regional agreements. *Prerequisite:* POLS 1000.

2420. Women and Politics. 3. [C2♦(none)] Describes and compares status and political activity of women in America with those of women and men in other societies in order to explore causes, methods and results of political involvement by women. Cross listed with WMST 2420. *Prerequisite:* POLS 1000.

2430. Parties, Interest Groups and Elections. 3. [C2♦CS] Studies nature and functions of political organizations in American democracy. Discusses origins and evolution of American parties, causes of interest group development, political socialization, political participation and voting behavior, as well as activities of interest groups within American society and political system. Emphasizes current trends regarding role of parties versus interest groups. *Prerequisite:* POLS 1000.

2450. Politics and Media. 3. [C2♦(none)] Examines the media's coverage of current events, governmental institutions and electoral campaigns. Discusses effect of media on individuals' opinions and behavior. Identical to COJO 2480. *Prerequisite:* POLS 1000.

2460. Introduction to Political Philosophy. 3. Surveys history of Western political thought including study of concepts and approaches to political philosophy. (Offered once a year)

3050. Athenian Democracy. 3. Examines democratic government in ancient Athens: its origins and development, its practical workings, how politics were conducted and power was gained and exercised, citizen participation, law courts, and evaluations of democracy in the ancient world and since. Cross listed with CLAS/HIST 3050. *Prerequisite:* WB.

3100 [2100]. Politics and the Judicial Process. 3. Analyzes courts and their personnel in the American political system, including examination of functions of courts, characteristics of judicial process, approaches to the study of judicial behavior, and role of courts as policy makers. Cross listed with CRMJ 3100. *Prerequisite:* POLS 1000.

3220. Government and Politics of Russia and FSU. 3. [C2, G1♦(none)] Examines the political, economic and identity transitions of Russia and other states of the former Soviet Union during the post-communist era. Explores how current challenges relate to past Soviet practices.

3270. Governments and Politics of the Middle East. 3. [G1♦(none)] Acquaints students with basic political, social and economic institutions of Middle Eastern countries. Emphasizes post-World War I developments, contemporary issues and problems. Special attention is given

to politics of major nations in the Middle East such as Turkey, Iran, Israel, Egypt, Saudi Arabia, Iraq and Syria.

3300. Model United Nations. 1-3 (Max. 6). Focuses on the United Nations (UN) system and multilateral diplomacy to prepare students to participate in a Model UN simulation. Students learn to evaluate the UN system, learn strategies to address international problems, and develop skills to effectively represent a country in a role-playing exercise. *Prerequisite:* 9 hours of POLS or INST.

3500. Gender and Society. 3. [C2, W2♦WB] Examines the social construction of gender using interdisciplinary methods of analysis. Generally students will find that the readings and assignments emphasize the importance of denaturalizing the gender stereotypes and norms that impact women's and men's lives. Intersections between gender, race, class, age, and sexual orientation are examined within the context of both American and global cultures. Cross listed with WMST 3500. *Prerequisite:* WMST 1080 or cross listed equivalent.

3680 [2020]. Introduction to Empirical Political Analysis. 3. [M3♦(none)] Introduces students to concepts, approaches and methodologies for empirical analysis of political problems. Students gain practical experience in statistical analysis of political data generated through surveys and other research techniques. *Prerequisites:* STAT 2050, 2070 or equivalent; 9 hours in political science.

4013. Political Geography. 3. Geographic space is subdivided into political units to aid human interaction and to facilitate political processes. Examines the spatial organization of political space and its effects upon political processes at varying geographic scales ranging from the local to international. Dual listed with POLS 5013; cross listed with GEOG 4013. *Prerequisite:* GEOG 1000 or 1020, or 9 hours of social science.

4051 [4050]. Environmental Politics. 3. [C2, W3♦WC] Analyzes environmentalism as a political phenomenon. Provides students with a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with AMST, ENR, GEOG and REWM 4051. Dual listed with POLS 5051. *Prerequisite:* POLS 1000.

4052. Federal Land Politics. 3. Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with AMST/ENR/GEOG/REWM 4052. *Prerequisite:* POLS 1000.

4090. Anglo-American Jurisprudence. 3. Considers topics, such as functions of law in a democratic society; historical origins and growth of the common law as contrasted to the civil (code) law systems; and principal theories of nature and functions of law which have influenced development of English and American legal institutions. Dual listed with POLS 5090. *Prerequisite:* 9 hours of political science or philosophy.

4100. Constitutional Law Principles. 3. Encompasses case-study analysis of judicial decisions and policies affecting constitutional interrelationships among the three branches of federal government, federal-state relations, as well as powers of the states and federal government in the area of social and economic regulatory laws. Pays special attention to the study of judicial decisions from a policy-making viewpoint and methods of analyzing constitutional law cases. Dual listed with POLS 5100. *Prerequisite:* 9 hours of political science.

4110. Constitutional Rights and Liberties I: The Bill of Rights. 3. Encompasses case-study analysis of legal and political consequences of recent judicial decisions in such areas as freedom of speech, press, association, religion and criminal procedure. Cross listed with CRMJ 4110; dual listed with POLS 5110. *Prerequisite:* 9 hours of political science (including POLS 4100).

4120. Constitutional Rights and Liberties II: The Thirteenth, Fourteenth and Fifteenth Amendments. 3. Encompasses case-study analysis of legal and political consequences of recent judicial decisions in such areas as race relations, the right to vote, legislative apportionment and the Constitution in time of war. Cross listed with CRMJ 4120; dual listed with POLS 5120. *Prerequisite:* 9 hours of political science (including POLS 4100).

4230. Governments and Politics of Asia. 3. Studies political systems of East Asia. Analyzes impact of social and economic factors upon political institutions. Dual listed with POLS 5230. *Prerequisite:* 9 hours of political science.

4240. Culture, Society, and Political Economy in East Asia. 3. [C2, G1♦(none)] Discusses how culture, history, social systems and political institutions of East Asian nations have contributed to their political economy of rapid industrialization and social transformation. Dual listed with POLS 5240. *Prerequisite:* one course in global studies; two courses in political science, history or sociology.

4250. Politics of Developing Nations (Seminar). 3 (Max. 6). An analysis of the processes of political, economic and social change in the non-Western world. Research methods are introduced and applied to selected topics. Dual listed with POLS 5250. *Prerequisite:* 9 hours of political science.

4290. Inter-American Relations. 3. [G1♦(none)] Surveys inter-American system and idea of hemispheric unity. Analyzes major issues confronting inter-American community. Dual listed with POLS 5290. Cross listed with INST 4290. *Prerequisite:* 9 hours of political science including POLS 2310.

4300. The World System. 3. [G1♦(none)] Analyzes structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Dual listed with POLS 5300. Cross listed with INST 4300 and SOC 4300. *Prerequisite:* SOC 1000 or ANTH 1100 or equivalent political science or social science course.

4330. American Foreign Relations. 3. Analyzes American foreign policy decision-making process and selected contemporary foreign policy problems. Stresses political and institutional factors, along with analysis of policy options. Dual listed with POLS 5330. Cross listed with INST 4330. *Prerequisite:* 9 hours of political science including POLS 2310.

4340. International Organizations. 3. Encompasses development of world organizations, such as League of Nations, United Nations and its affiliate bodies. Also studies regional organizations and private international bodies. Dual listed with POLS 5340. Cross listed with INST 4340. *Prerequisite:* 9 hours of political science including POLS 2310.

4350. Sustainable Development and Global Policy. 3. [W3, G1♦(none)] Considers in-depth meaning of "sustainable development" and trade-offs necessary to achieve it. Considers this issue from global perspective through application of theories in economics, political science, international relations, technology studies and ethics. Dual listed with POLS 5350. *Prerequisite:* 9 hours of political science or economics.

4400. Black Politics, 1867 to the Present. 3. Afro-American participation in partisan electoral politics in the United States from Reconstruction to the current presidential election. Cross listed with AAST 4400. *Prerequisites:* 3 hours of 3000-level courses in African American studies or political science and WA.

4420. Seminar in Public Administration. 3 (Max. 6). Includes reading and research in selected public administration topics. Dual listed with POLS 5420. *Prerequisites:* 9 hours of political science and consent of instructor.

4430. United States Presidency. 3. Analyzes office of president, its roles, development, relationships with other governmental agencies and problems in the contemporary world. Dual listed with POLS 5430. *Prerequisite:* 9 hours of political science.

4510. Seminar in Political Behavior. 3 (Max. 6). Examines behavior of participants in political systems with special emphasis on demographic and other variables and their influence. *Prerequisites:* 9 hours of political science and consent of instructor.

4520. Public Opinion. 3. Deals with natures of a public in democracy and means of forming and manipulating public opinion. Emphasizes role of public opinion as essential ingredient of the policy-making process in popular government. Dual listed with POLS 5520. *Prerequisite:* 9 hours of political science.

4530. Legislatures and Legislation. 3. Studies legislative processes at all levels of American government, emphasizing legislative roles, legislative practices and procedures. Dual listed with POLS 5530. *Prerequisite:* 9 hours of political science.

4550. Internship in Government. 1-6 (Max. 6). Integrates practical political experience with academic knowledge. Students are expected to participate in specifically assigned duties and observe broader activities of the sponsoring organization; then, reflect upon this participation and observation in the form of written assignments. Internship credit can be earned for work in political campaigns, Wyoming Legislature or government services. Offered for S/U only. *Prerequisite:* 9 hours of political science.

4560. Washington Semester Program. 15. Provides students with paid internships in Washington, D.C., in either congressional offices or federal agencies. Selection into the program is very competitive and is made the semester prior to service. Offered for S/U only. *Prerequisites:* POLS 1000 and 6 additional hours of political science courses.

4600. Political Violence. 3. Examines causes and consequences of violence. About one-third is devoted to causes including animal violence, human nature and social norms. Remainder examines causes and consequences of violence in particular context. Description of each course project can be found in the syllabus. The final project is an extensive review of the Holocaust in which students are asked to analyze this act of mass murder, then argue whether conditions that produced the Holocaust are present in Western society. Cross listed with CRMJ 4600; dual listed with POLS 5600. *Prerequisites:* POLS 1000 and SOC 1000.

4640. Political Philosophy: Ancient and Medieval. 3. [C1♦(none)] Surveys political philosophy from Classical Greek period to Machiavelli. Dual listed with POLS 5640. *Prerequisite:* 9 hours of political science.

4650. Political Philosophy: Modern. 3. [C1♦(none)] Surveys political philosophy from Machiavelli to present. Dual listed with POLS 5650. *Prerequisite:* 9 hours of political science.

4660. Recent Political Philosophy. 3. Examines central developments in political philosophy that guide action in today's world. Dual listed with POLS 5660. *Prerequisite:* 9 hours of political science.

4700. Readings in Political Science. 1-3 (Max. 6). Outlines special programs of readings in government and politics to meet needs of individual students. *Prerequisite:* 9 hours of political science.

4710. Topics in _____ . 1-3 (Max. 9). Accommodates various specialized subjects not offered as regular courses. *Prerequisites:* POLS 1000 and 3 additional hours of political science.

4720. Workshop in Practical Politics. 1-3 (Max. 6). Familiarizes or strengthens participants in techniques of political effectiveness. Includes political organization, campaigning and persuasion. Guest speakers include public officials and experts in the field of practical politics. *Prerequisite:* 9 hours of political science.

4810. Seminar in Political Philosophy. 3 (Max. 6). Seminar in Political Philosophy; Encompasses reading and research on selected problems in political philosophy. Dual listed with POLS 5810. *Prerequisite:* consent of instructor.

4840. Seminar in Public Law. 3 (Max. 6). [W3♦(none)] Includes reading and research on selected problems in public law. *Prerequisite:* POLS 1000, 4100.

4850. Seminar in American Politics and Institutions. 3 (Max. 6). [W3♦WC] Includes reading and research on selected U.S. government and politics problems. Dual listed with POLS 5850. *Prerequisite:* consent of instructor.

4865. [4900] Seminar in International Relations Theories. 3 (Max. 6). Examines theoretical issues in the study of international politics by analyzing major theoretical schools of thought in the study of international relations such as realism, constructivism, and theories of foreign policy. Dual listed with POLS 5865. *Prerequisite:* consent of instructor.

4870. Seminar in International Relations. 3 (Max. 6). Encompasses reading and research in international law and politics. Dual listed with POLS 5870. *Prerequisite:* consent of instructor.

4875 [4910]. Seminar in Comparative Foreign Policy Analysis. 3 (Max. 6). Overviews theories and approaches to cross-national analysis of foreign policy. Examines foreign policies of advanced industrial democracies, Russia and various Third World nations. Emphasizes foreign policy decision making processes in non-American settings. Dual listed with POLS 5875. *Prerequisite:* POLS 2310.

4890. Seminar in Comparative Government and Politics. 3 (Max. 6). [C2, G1, W3♦WC, G] Researches selected topics in comparative government and politics. Dual listed with POLS 5890. *Prerequisite:* consent of instructor.

Psychology

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Department Chair: Carolyn Pepper

Professors:

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Assistant Professors:

BRETT J. DEACON, B.A. Truman State University 1996; M.A. Northern Illinois University 1999; Ph.D. 2002; Assistant Professor of Psychology 2004.

CYNTHIA M. HARTUNG, B.S. University of Wisconsin-Madison 1990; M.A. University of Kentucky 1993; Ph.D. 1998; Assistant Professor of Psychology 2007.

SEAN M. McCREA, B.A. Bucknell University 1996; Ph.D. Indiana University 2002; Assistant Professor of Psychology 2009.

CHRISTINE L. McKIBBIN, B.S. Michigan State University 1991; M.S. University of North Texas 1994; Ph.D. 1997; Assistant Professor of Psychology 2007.

SUZANNA L. PENNINGROTH, B.S. University of Washington 1989; M.A. University of Illinois at Chicago 1993; Ph.D. 1995; Assistant Professor of Psychology 2007.

BENJAMIN M. WILKOWSKI, B.A. Ohio University 2002; M.S. North Dakota State University 2005; Ph.D. 2008; Assistant Professor of Psychology 2008.

Academic Professional Lecturer:

SCOTT FRENG, B.S. Black Hills State University 1995; M.A. University of South Dakota 1998; Ph.D. University of Nebraska - Lincoln 2001; Associate Lecturer in Psychology 2008, 2003.

Professor Emeritus

Charles J. Ksir, Karen B. Nicholas

The Department of Psychology offers coursework at several levels:

1. Introductory courses for students in other programs who wish an elementary knowledge of psychology.
2. Courses supportive of work in other majors, particularly education.
3. An undergraduate major that is sufficiently flexible to allow students to prepare for graduate programs in psychology, professional schools (e.g. law, medicine) or for employment after graduation.
4. Graduate course work leading to the Ph.D. in clinical or experimental psychology.

Facilities are available for course work and laboratory experiences in areas of psychology such as cognition, personality, social, biological psychology, psychopharmacology, cognitive development, and social development.

Students who wish to increase chances of employment related to their undergraduate majors should consult an adviser concerning areas of specialization within psychology.

Students planning graduate work in psychology should consult with their faculty adviser concerning career choices and development.

Learning Outcomes

We expect that our Psychology graduating students will have:

1. a basic knowledge of psychology and related fields.
2. the ability to evaluate the assumptions, purposes, methods, and results of psychological research and scholarship.
3. skills in teamwork, leadership, writing, speaking and listening, especially concerning psychology-related topics.

Credit by Examination

Credit by examination will be allowed only for PSYC 1000. The examination accepted is the College Level Examination Program (CLEP); the passing score is 50.

Advanced Placement

The psychology department will accept a score of 3 on the AP exam for credit in PSYC 1000, effective Fall 1991.

Undergraduate Major

A major requires a minimum of 33 semester hours and may not exceed 60 hours in psychology. Of these, 18 hours must be at the 3000 level or above. These upper-division courses must also be taken from at least two different members of the psychology department faculty listed in this bulletin.

Students must complete the following courses:

PSYC 1000 General Psychology

PSYC 2000 Research Psychological Methods

Four of five cores:

Biological, PSYC 2210 Drugs and Behavior **or**

PSYC 2080 Biological Psychology

Developmental, PSYC 2300

Developmental Psychology

Clinical, PSYC 2340 Abnormal Psychology

Social, PSYC 2380 Social Psychology

Cognitive, PSYC 3120 Cognitive Psychology

Additionally **one** of the following restricted enrollment (laboratory, seminar, or writing intensive) courses is required: PSYC 4050, 4060, 4110, 4150, 4220, 4250, 4320, 4350, 4380, 4400, 4740, 4760, 4860.

Also required are 6 hours of sociology or anthropology; LIFE 1000, 1003, or 1010; and STAT 2050 or 2070.

For graduation, students must receive a C or better grade in all courses taken to satisfy department requirements.

Undergraduate Minor

A minor in psychology requires 18 semester hours in psychology. These must include PSYC 1000 or equivalent and 9 hours at the 3000-level or above, with a grade of C or better.

A&S students seeking a minor in A&S must have 12 hours exclusive to the minor and not used in the major.

Graduate Study

The department offers programs leading to the master's degree under Plan A and to the Doctor of Philosophy degree. For details of the graduate programs see the *Graduate Bulletin* and the brochure available in the department's office.

Psychology (PSYC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. General Psychology. 3. [C2↔CS] Surveys the field of psychology through lectures, class discussion and assigned readings. Includes development of behavior, physiological mechanisms of behavior, perception, motivation and emotion, learning, intelligence, individuality and personality and mental health.

1001. Issues in Psychology. 1. [(none)↔I, L] Students debate and analyze controversial topics confronting psychologists, thereby gaining a better understanding of the varieties of work done by psychologists, as well as a better understanding of the methods psychologists use to advance the state of knowledge in the field. *Prerequisite:* PSYC 1000 or concurrent enrollment.

1111. Psychology and Social Justice. 3. [(none)↔I] Examines the field of political psychology, the study of how individuals behave in the context of policy-making, supporting leaders and causes, and voting. Particular emphasis is placed on social justice in democratic systems, such as the persistence of inequalities based on race, gender, and social class.

2000. Research Psychological Methods. 4. [W2↔WB] Introduces some of the methods of investigating psychological questions. Exposure to various research strategies ranging from observational to experimental, using representative laboratory exercises, lectures, readings, films and demonstrations. Requires written and oral reports. May be used to satisfy department's written and oral communication requirement for majors. Laboratory two hours per week. *Prerequisites:* PSYC 1000, ENGL WA, STAT 2050 or 2070.

2080. Biological Psychology. 3. Introduces biological bases of behavior. Includes ethology and comparative behavior, psychobiological development, physiological and sensory mechanisms of behavior, and evolution and behavioral genetics. Presents basic structural and functional properties of the nervous system. *Prerequisites:* PSYC 1000 and general biology. (Normally offered fall semester)

2210. Drugs and Behavior. 3. Surveys drugs which affect behavior, emphasizing both psychotherapeutic agents and drugs with abuse potential. Includes brief introduction to the chemistry of the brain and how drugs may have their effects. Behavioral, social, historical and medical aspects of each major class of psychoactive drugs are discussed. *Prerequisite:* PSYC 1000.

2220 [2200]. Infant Development. 3. [C2, W2↔(none)] Examines aspects of development of the human organism in the first three years of life. Examines theories, research and issues relating to infant development. Includes motor, perceptual, physical, cognitive, emotional and social development. *Prerequisite:* PSYC 1000. (Offered based on sufficient demand and resources)

2300. Developmental Psychology. 3. Introduces psychological development, including age-related changes in thinking, emotion, and behavior. Major theories, methodologies, and empirical discoveries are surveyed in an exploration of developments beginning with conception, with emphasis on social, affective, and cognitive developments in childhood and infancy and their implications for policy and practice. *Prerequisite:* PSYC 1000. (Normally offered spring semester)

2310. Exceptional Children. 2. Studies behavior, mental processes and developmental patterns of atypical children, the physically handicapped, the gifted, the mentally retarded and children with neurological and psychological disturbances. Students will not be allowed credit in PSYC 2310 if PSYC 4310 is taken. *Prerequisite:* 4 hours in psychology. (Offered at Wyoming community colleges)

2330. Psychology of Adjustment. 3. Brings students to an understanding of more common problems of personal adjustment in terms of general psychology principles. Students may not receive credit in both PSYC 2330 and previously offered PSYC 633. *Prerequisite:* 4 hours in psychology. (Offered at Wyoming community colleges)

2340 [4340]. Abnormal Psychology. 3. Provides a general overview of abnormal behavior, emphasizing types, etiology and treatment methods. *Prerequisite:* PSYC 1000. (Normally offered spring semester)

2380 [4755]. Social Psychology. 3. Examines how peoples' thoughts, feelings, and behaviors are influenced by the presence of others. Course will cover a broad range of theories and research in social psychology. *Prerequisite:* PSYC 1000. (Normally offered fall semester)

3120 [4120]. Cognitive Psychology. 3. Deals with higher mental processes that are primarily unique to human beings from theoretical and research orientations. Emphasizes interrelationships between various cognitive processes and continuity of those processes with perceptual and non-cognitive activities. Discusses how information is processed and remembered. *Prerequisite:* 6 hours in psychology. (Normally offered spring semester)

3150. Moral Development. 3. [C2↔(none)] Students explore the vast psychological literature on moral development in affect, cognition and behavior from infancy to adulthood. Topics covered include major developmental theories, research methodologies, current scientific knowledge and its relationship to issues of cultural diversity, social policy and education. *Prerequisite:* PSYC 1000, junior/senior standing or consent of the instructor. (Offered based on sufficient demand and resources)

3160 [4160]. Learning and Behavior. 3. Learning focuses on how our experiences affect how we think, feel, and behave. Reviews major

theoretical approaches to learning which derive from animal and human research. Discusses applications of learning principles to understanding current behavior, teaching and maintaining new behavior, and eliminating unwanted behavior. *Prerequisite:* 6 hours in psychology. (Normally offered spring semester)

3250. Health Psychology. 3. Provides overview of growing partnership between psychology and health care, including history of psychology in health care; theoretical foundations of health and illness; intervention and research techniques; stress and high risk behaviors (e.g., substance abuse, eating behaviors, AIDS); psychology's contribution to improving outcomes and quality of life in chronic and life-threatening behaviors. Cross listed with NURS 3250. *Prerequisite:* PSYC 1000. (Offered based on sufficient demand and resources)

3300. Gender Development. 3. Examines the development of gender roles and sex differences. Incorporates developmental, clinical and social psychological perspectives. Includes examination of biological, social and cultural factors on gender development; conceptualizations of masculinity, femininity and androgyny; differences in play behavior in boys and girls; evaluation of psychological measurement and research regarding gender development and sex differences. Cross listed with WMST 3300. *Prerequisite:* PSYC 2300 or 4300.

3390 [4390]. Theories of Personality. 3. Intensively studies major theoretical approaches to explanation of personality, as well as historical trends that culminated in the theories. *Prerequisite:* 6 hours in psychology. (Normally offered fall semester)

3600. Principles of Animal Behavior. 3. Intensively introduces scientific study of animal behavior. Utilizes evolutionary, ecological and physiological approach. *Prerequisite:* introductory course in ZOO, LIFE or PSYC.

4050. Experimental Psychology. 4. [W3↔WC] Through lecture and laboratory students are acquainted with experimental methods in psychological research. *Prerequisites:* PSYC 2000, STAT 2050 or STAT 2070, and 20 hours in psychology. (Normally offered fall semester)

4060. History and Systems of Psychology. 3. Deals with history of the ideas that led to present science of psychology. Emphasizes the origins of modern psychology within the context of 19th century science. Discusses philosophical origins of modern psychology. *Prerequisite:* 9 hours in psychology. (Normally offered spring semester)

4070. Motivation. 3. Studies motivation concerning both humans and non-human animals, emphasizing humans. Discusses the physiological basis of motivation in some detail. Considers emotion as primarily a motivational state. Covers psychodynamic and personality factors with regard to the human. *Prerequisite:* 6 hours in psychology. (Normally offered fall semester)

4080. Physiological Psychology. 4. [(none)♦SB] Examines physiological mechanisms of behavior, strongly emphasizing neural and hormonal processes. Includes fundamentals of neuroanatomy and evolution of the nervous system, basic neurophysiology, sensory and motor processes, as well as the physiology of emotion, motivation, learning and memory. Lecture three hours per week. Laboratory two hours per week. *Prerequisites:* 6 hours in psychology and LIFE 1000, 1003, or 1010 or an introductory zoology course. (Normally offered spring semester)

4090. Comparative Psychology. 4. Studies unicellular organisms, plants and animals with special reference to principles of behavior common to all. Discusses dependence of behavior on structure, particularly neuromuscular and sensory mechanisms in animals, and its variability and modifiability. Emphasizes phylogenetic and ontogenetic development of nervous systems and behavior systems. Lecture three hours per week. Laboratory two hours per week. *Prerequisite:* 6 hours in psychology. (Offered based on sufficient demand and resources)

4110. Sleep and Dreams. 3. Focuses on psychological data of sleep and dreams, as well as implications for the field of contemporary research. Particular attention given to subjective phenomena during sleep and to recent studies of the nature, meaning and function of dreams. *Prerequisite:* 6 hours in psychology. (Offered based on sufficient demand and resources)

4150. Cognitive Development. 3. Examines cognitive development from infancy through adolescence. Explores, through lecture, discussion and projects, major theories and current empirical research on cognitive development, as well as implications for social and educational policies concerning children. *Prerequisite:* 9 hours in psyc., including child psychology course. (Offered based on sufficient demand and resources)

4200. Sensation and Perception. 3. Examines behavioral and physiological processes involved in sensation and perception. Discusses each of the sensory systems, emphasizing their physiology and role in perceptual processing. *Prerequisite:* 6 hours in psychology. (Offered based on sufficient demand and resources)

4220. Psychopharmacology. 3. [W3♦WC] Studies behavioral and conscious effects of drugs and drug use in treatment of psychological disorders. *Prerequisite:* PSYC 2340. Dual listed with PSYC 5220. (Normally offered spring semester)

4250. Psychological Aspects of Chronic Illness. 3. Investigates the impact of chronic physical illnesses on diagnosed children and adults, their families, and society. Emphasizes effects of illnesses on psychological adaptation and quality of life. Should be of particular interest to helping professionals and health care workers. *Prerequisites:* PSYC 1000 and 3250. (Offered based on sufficient demand and resources)

4300. Adolescent Development. 3. Examines the developmental changes that occur during adolescence. Considers physical and physiological growth; intellectual, cognitive, academic and vocational development, changes in attitudes, interests and activities; and development of interpersonal relationships. *Prerequisite:* PSYC 1000. (Normally offered spring semester)

4310. Developmental Psychopathology. 3. Provides basic understanding of developmental psychopathology. Examines characteristics, etiology, assessment and treatment of psychological disorders in children including autism, mental retardation, anxiety, depression, attention, learning, and conduct problems. *Prerequisite:* 6 hours in psychology, including PSYC 2300. (Normally offered fall semester)

4320. Intellectual Disability. 3. Acquaints students with all aspects of intellectual disability including assessment, diagnosis and classification, etiology, and associated health and mental health difficulties. Prevention, educational and psychological intervention, family adaptation, and community involvement are also addressed. *Prerequisite:* PSYC 2310 or 4310. (Normally offered spring semester)

4350. Psychology of Adulthood. 3. Examines theories and research on psychological development from early adulthood to the end of life, with special emphasis on positive development, successful aging, and methodological issues in the study of adult development. *Prerequisite:* PSYC 1000. (Offered based on sufficient demand and resources)

4370. Criminal Psychopathology. 3. Provides an overview of current theories and empirical evidence concerning relationship between psychological disorder and criminal behavior. Examines various clinical syndromes and their role in biological, social and psychological genesis of crime, as well as the concept of criminal responsibility. Cross listed with CRMJ 4370. *Prerequisite:* 6 hours in psychology. (Normally offered spring semester)

4380. Death and Dying. 3. Designed to provide a comprehensive overview of the field of thanatology. Death is considered from both an individual and sociocultural perspective. Aims to provide solid ground in research, methods, and theory of end-of-life issues and to encourage contemplation of personal and professional applications of death studies. *Prerequisite:* 9 hours in psychology, including Developmental Psychology. (Normally offered spring semester)

4400. Principles of Psychological Testing. 3. Encompasses basic concepts, principles and procedures of psychological testing, with a lecture, discussion, laboratory project approach. Emphasizes nature and uses of test reliability, validity, norms and transformations, selecting and evaluating tests, test interpretation models and professional ethics in test use. Lecture three hours per week. *Prerequisites:* 12 hours in psychology and STAT 2050 or 2070. (Normally offered fall semester)

4500. Introduction to Clinical Psychology. 3. Provides students with general introduction to clinical psychology as a subarea of psychology. Deals with the search for, and applications of, psychological principles and methods aimed at assessing and explaining unique or special problems of the individual, group or family, assisting client(s) to function more meaningfully and effectively, and helping to prevent future problems. *Prerequisite:* 12 hours in psychology, including PSYC 2340. (Normally offered fall semester)

4730. Psychology and Law. 3. Exposes students to the application of psychological principles to problems in law. Emphasizes the American trial system, correction systems and civil commitment. Cross listed with CRMJ 4730. *Prerequisite:* 12 hours in psychology. (Offered alternate years)

4740. Advanced Social Psychology. 3. [(none)♦WC] Concentrates on critical assessment of interpersonal behavior. Students are expected to become familiar with data gathering, analysis and reporting procedures commonly used in contemporary social psychology. *Prerequisites:* PSYC 2380 and STAT 2050. (Normally offered spring semester)

4760. Child Maltreatment. 3. [C2♦(none)] Lecture and seminar. Examines the phenomenon of child abuse and neglect. Includes an overview of attitudes towards and legal definitions of child maltreatment. Explores parental factors, contextual influences and developmental consequences of maltreatment. Relies heavily on current research in child abuse and neglect. Emphasizes policy implications. Cross listed with CRMJ 4760. *Prerequisite:* 6 hours in psychology. (Offered alternate years)

4820. Psychology of Human Sexuality. 3. A clinical-personality orientation to psychological factors in the development and expression of human sexuality. Focuses on the individual: interactions of physiological factors with developmental influences and personality patterns that produce feelings, thoughts and behaviors associated with human sexuality. *Prerequisite:* 6 hours in psychology, including child development course.

4830. Senior Thesis. 3. [W3♦WC] Senior research project under faculty guidance and supervision. Faculty sponsorship must be obtained prior to registration. *Prerequisites:* senior standing, majors only, 27 hours in psychology, PSYC 2000.

4850. Field Work in Psychology. 1-3 (Max. 6). Provides opportunities to experience applied aspects of psychology in external settings through volunteering, teaching, and related activities. Type and location of experience and requirements for earning credit and for grading are determined with a sponsoring faculty person in the psychology department. An acceptable paper based on work completed may also be required. No credit is available for field work prior to registration for this course. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor required in advance.

4855. Undergraduate Research in Psychology. 1-3 (Max. 6). Provides new opportunities to assist in aspects of conducting basic and applied psychological research with a sponsoring faculty person in the psychology department. Specific research activities and requirements for earning credit and for grading are determined with a sponsoring psychology faculty person. An acceptable paper based on work completed may also be required. No credit is available for research conducted prior to registration for this course. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor required in advance.

4860. Seminar. 1-6 (Max. 6). Small group meetings for extended discussions of particular topics in psychology, generally one topic for the entire semester. Students prepare thorough reports on an aspect of the topic and present this as basis for group discussion. Topics vary from semester to semester. There is no textbook for the seminar, but students are expected to make extensive use of the library. *Prerequisites:* 9 hours in psychology and consent of instructor. (Offered based on sufficient demand and resources)

Religious Studies

325 Hoyt Hall, 766-3204

FAX: (307) 766-2096

Web site: www.uwyo.edu/relstds

Director: Paul V. M. Flesher

Professors:

KEVIN S. LARSEN, B.A. Brigham Young University 1976; M.A. 1978; A.M. Harvard University 1979; Ph.D. 1983; Professor of Spanish 1998, 1989.

CAROLINE McCracken-Flesher, M.A. University of Edinburgh 1980; M.A. Brown University 1986, Ph.D. 1989; Professor of English 2004, 1989.

Associate Professors:

MICHAEL C. BROSE, B.S. Seattle Pacific University 1978; M.Sc. University of British Columbia 1985; M.A. University of Washington 1991; Ph.D. University of Pennsylvania 2000; Associate Professor of History 2006, 2000.

PAUL V. M. FLESHER, B.A. University of Rochester 1979; M.Phil. Oxford University 1982; Ph.D. Brown University 1988; Associate Professor of Religious Studies 2001, 1993.

MARIANNE R. KAMP, B.A. Dartmouth College 1985; Ph.D. University of Chicago 1998; Associate Professor of History 2005, 2000.

ERIC W. NYE, B.A. St. Olaf College 1974; M.A. University of Chicago 1976; Ph.D. 1983; Associate Professor of English 1989, 1983.

ROBERT TORRY, B.A. Hiram College 1972; Ph.D. State University of New York-Buffalo 1988; Associate Professor of English 1993, 1983.

KRISTINE T. UTTERBACK, B.A. Bowling Green State University 1972; M.M. University of Wisconsin 1977; M.A. 1977; M.A. University of Toronto 1980; Ph.D. Center for Medieval Studies, University of Toronto 1984; Associate Professor of Religious Studies 2008.

Assistant Professors:

QUINCY D. NEWELL, B.A. Amherst College 1997; M.A. University of North Carolina at Chapel Hill 2001; Ph.D. 2004; Assistant Professor of Religious Studies 2004.

Academic Professional Lecturer:

SETH WARD, B.A. Yale University 1974; M.A. 1978; M.Phil. 1979; Ph.D. 1984; Assistant Academic Professional of Religious Studies 2007, 2003.

Adjunct Professors:

MARY L. KELLER, B.A. Williams College 1987; M.A. Syracuse University 1992; Ph.D. 1999; Adjunct Associate Professor of Religious Studies 2003.

DONALD DALE WALKER, B.A. University of Michigan 1986; M.A. University of Chicago 1988; Ph.D. 1998; Adjunct Assistant Professor of Religious Studies 2006.

Professor Emerita:

Gladys M. Crane

Throughout history, religion has played an important role in shaping cultures and societies. Religious beliefs have inspired armies in their wars and leaders in their decisions. Religions have provided the foundation for ethical behavior and in many societies have been the primary source of education. In today's world, religions remain important, influencing our responses to 9/11, the Middle East crisis, and other recent events in other regions around the world. Even in our own secular United States, religions and their beliefs play a major role in our debates over public policy.

The Religious Studies Program offers a range of courses in the academic study of religions. These courses seek to acquaint students with religious beliefs and behavior, helping them to understand the ability of religions to define the world in which their adherents live and the power religions have to influence the behavior of their followers. Religious Studies courses cover a broad range of religions, both modern and historical. Some courses focus on understanding a single religion in a limited time period, while others compare aspects of different religions. Yet further courses focus on religious expression, studying how religious beliefs are depicted in literature, film, art and music. Many of these courses are offered by the Religious Studies Program, while others can be found in various departments, including anthropology, art, English, history and sociology.

Undergraduate Minor

The minor in religious studies requires a student to complete 18 hours of relevant courses, all with a grade of C or higher. These should consist of courses as set out below:

1. RELI 1000 Intro to Religion
2. One of the following four courses:
 - RELI 4000 Theories of Religion
 - ANTH 4300 Anth of Religion
 - PHIL 2310 Phil of Religion
 - SOC 3200 Soc of Religion
3. Twelve hours of courses focusing on issues in the study of religions, 9 of which should be at the 3000-level or higher. These courses should focus on aspects of individual religions, or of several religions at once. These courses may be chosen from: (1) any Religious Studies course (i.e., RELI), (2) the following list, or (3) selected in consultation with the director of the Religious Studies Program.
 - ANTH 1100 World Ethnography
 - ANTH 2210 N American Indians
 - ANTH 4300* Anth of Religion
 - ART 2720 Intro to Art/Cultr of Clas Islam
 - CLAS 2010 Epic Poetry
 - ENGL 2170 The Bible as Lit
 - ENGL 2340 Native Amer Cult/Lit
 - ENGL 4190 Milton
 - PHIL 2300 Ethics in Practice
 - PHIL 2310* Phil of Religion
 - PHIL 3300 Ethical Theory
 - PHIL 3320 Eastern Thought
 - PHIL 4560 Metaphysics
 - SOC 3200* Sociology of Reli

*These courses may be used to fulfill requirements 2 or 3, but one course may not be used to fill both.

Undergraduate Major

Religious Studies currently does not have a major; however, students may obtain a specialization in religious studies by organizing a Self-Designed Major. Interested students should contact the Religious Studies office in 325 Hoyt Hall.

Religion (RELI)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Introduction to Religion. 3. [C1, G1↔CH, G] Introduces world religions and shared characteristics. Draws on various academic approaches to religion study, emphasizing similarities and differences among wide variety of religions. (Normally offered once a year)

2040. Religions of the Middle East: Judaism, Christianity and Islam. 3. [(none)↔CH, G] Analyzes origins and early years of three major religions that arose in the Middle East: Judaism, Christianity and Islam. Looks at historical development, political and cultural context, and structure of each religion.

2060. Nature and Spirit. 3. [C1↔(none)] Examines classical principles of Christian theology in light of contemporary ecological issues. Focuses on how Christian thinkers have addressed the question of the relationship between humans, God and nature.

2070. Gender and Religion. 3. [C1↔(none)] Aims at understanding how religion constructs and reinforces gender roles in religion and society. Looks at traditional gender roles in Christianity and the transformation they have undergone in the past century or so. Cross listed with WMST 2070.

2080. Holocaust. 3. [(none)↔CH] Surveys the destruction of European Jewry, 1933-1945. Cross listed with HIST 2080. *Prerequisite:* HIST 1120.

2110 [1010]. Introduction to the Old Testament. 3. [C1, G1↔CH] Introduces students to the books of the Old Testament and people whose way of life they describe. Pays particular attention to religion of the Israelites, their history and culture. Focuses on different historical circumstances in which the books were written.

2150. New Testament Survey. 3. Introduces academic study of the New Testament. Focuses on questions of history, religious and cultural context, occasion and purpose for writing the different books and theological development of early Christianity.

2175. The Life and Teaching of Jesus. 3. [C1↔(none)] Explores life and teachings of Jesus within religious, cultural and political context of first-century Palestine. Studies Jewish, Greek and Roman influences on Palestine; then, examines affect of those influences on the gospels (both canonical and non-canonical).

2200. Contemporary American Religion. 3. [C1↔CH, D] The U.S. is home to more world religions and to more versions of those religions than any other nation on the planet. This course examines how the U.S. has shaped these religions and the impact these religions have had in turn on U.S. society and culture.

2225. History of Christianity. 3. [C1↔(none)] Traces Christianity from its beginnings to late 20th century. Cross listed with HIST 2225.

2250. American Religious History I (To 1865). 3. [(none)↔CH] Traces the history of religion in America through the Civil War. We will pay particular attention to the intertwining of religion and colonialism; the tension between emerging Protestant hegemony and religious pluralism; and the roles religion has played in justifying oppression and pursuing liberty in American history. Cross listed with HIST 2250. *Prerequisites:* None.

2252. American Religious History II (1865-1945). 3. [(none)↔CH] Traces American religious history from the Civil War through WWII. Focuses on how race/ethnicity, class, gender, and national origin affected religion, and explores how Americans used religion in oppressing and liberating people; marking and erasing difference; and exporting values abroad as well as reforming society at home. Cross listed with HIST 2252. *Prerequisites:* None.

2255. Introduction to Judaism. 3. Descriptively analyzes Judaism. Initially focuses on history of Judaism from its origins in Ancient Israel to modern period. Then it studies the religion itself, analyzing its beliefs and practices and how they influence Judaism's adherents.

2320. History of Islam. 3. [(none)↔CH, G] Focuses on the origins of Islam and its early formation, its growth and spread across the world, and its intellectual, spiritual and historical character. Time will also be spent on the formation of Islam in the modern world and how that impacts the views and actions of its members. Cross listed with HIST 2320. *Prerequisites:* none.

2450. Traditional African Religion. 3. [(none)↔CH, G] Surveys traditional African religions, both ancient and contemporary. Cross listed with AAST 2450. *Prerequisite:* AAST 1000 or RELI 1000.

2500. Special Topics in Religion. 1-3 (Max. 6). Permits occasional investigation of different subjects in academic study of religion.

3150. Feminist Christian Thought. 3. [C1↔(none)] In recent decades Christianity has undergone important changes with regard to the place of women in the church. Addresses historical and theological discussions that have accompanied those changes. Also addresses how feminism and religion affect one's belief system. Cross listed with WMST 3150. *Prerequisites:* junior standing and at least one course in women's studies or religious studies.

3180. Drama and Religion. 3. [C3↔(none)] Drama and religion seek to communicate ideas about the ultimate meaning of human life. Both influence and are influenced by the culture from which they developed. Examines plays that are influenced by the Bible, Greek plays whose concepts have influenced Christianity over the centuries,

and modern plays that address religious issues. Cross listed with THEA 3180. *Prerequisite:* junior standing.

3200. Religion and American Culture. 3. [C1↔(none)] Explores the role of religion in the history of American culture. It considers how developments in American religious history have reflected larger trends in American society, and how those developments have in turn helped shape American society and culture. *Prerequisite:* one lower-level course in religious studies, American history, or American studies.

3225. Apocalypse: The History of the End. 3. The apocalyptic End of Time has become the subject of much speculation, especially since the beginning of the new millennium. Analyzes such speculation as a religious phenomenon in both ancient and modern religions, and attempts to understand its social, cultural and personal impacts. *Prerequisite:* junior standing.

3270. Jesus in America. 3. Examine the interplay between American religion and American culture by focusing on representations of Jesus. Students study a wide variety of movements within American Christianity; discuss issues of pluralism, inter-religious contact, and diversity within American religion and culture; and explore relationships between religion and America's popular and elite cultures. Cross listed with AMST 3270. *Prerequisite:* USP WB course.

3400. Religion in the American West. 3. [(none)↔CH, D] Considers the religious history of the American West from Pre-Columbian times to the present, paying special attention to the ways the West affects religious belief and practice. Themes of contact and conflict will be particularly important in our study, as will the changing perceptions of the West. *Prerequisite:* USP WB course.

4000. Theories of Religion. 3. Investigates different theories proposed to explain religion and methods used to investigate them. Pays primary attention to influential thinkers and theorists of the past century. *Prerequisite:* RELI 1000 and junior standing.

4090. Film and Religion. 3. [C1↔(none)] Movies use religion to convey messages; they debate religious issues and use religion to debate non-religious issues. This course analyzes how film makers use religion and religious themes to transform religions into advocates for social issues and to shape religion's role in society. Popular films drawn from many genres. Cross listed with ENGL 4090. *Prerequisite:* 6 hours of 2000-level or higher literature courses or religion courses.

4100. Steal Away: African American Religious Culture. 3. [(none)↔WC, D] This mid-level writing-intensive seminar is a comparative study of African American religious celebration, primarily in the context of Afro-Christianity, but touching on Islam, Candomble, "Voodoo," Sante-ria, and Rastafarianism. Cross listed with AAST 4100. *Prerequisite:* 3 hours in African American studies or history.

4113. Medieval Religious Dissent. 3. [C1♦(none)] Religious dissent in the Middle Ages included what might be called heresy, but also encompasses such marginal groups as Jews and witches. Examines development of orthodoxy and persecution of religious diversity between eleventh and 16th centuries within the historical context of the times. Cross listed with HIST 4113. *Prerequisite:* HIST 1110, 4100 or 4110.

4150. Christians, Jews and Muslims in Iberia. 3. [C1, G1♦(none)] Focuses on how, from the Middle Ages to the 20th century, these three religions have interacted and influenced each other and Iberian culture in general. Readings from numerous figures, from Maimonides to Goytisolo. *Prerequisite:* junior/senior standing. No knowledge of Spanish or Portuguese is required.

4190. Women and the Bible. 3. Explores depictions, roles and statuses of women found in the Bible, both Old and New Testaments. Introduces ways biblical portraits of women have been used in recent centuries to develop theologies of, by and for women. Cross listed with WMST 4190. *Prerequisite:* junior standing.

4260. Judaism in the Modern World. 3. Studies Jews and Judaism from pre-modern period to present. Traces migration of Jews from Europe to the USA and Israel, while examining radical changes that transform the religion. *Prerequisite:* junior standing.

4400. Internship in Religious Studies. 1-4 (Max. 4). Application of the academic discipline of religious studies to work outside the university classroom. Students must meet with the Religious Studies internship director in advance to identify the internship's components and grading criteria. Internships requiring a faith commitment on the intern's part are not eligible for credit. Not to be used for graduate credit. *Prerequisites:* 12 hours of religious studies, including RELI 1000 and RELI 4000 or its equivalent; advanced standing as a religious studies minor; consent of internship director.

4500. Special Topics in Religious Studies. 1-3 (Max. 12). Presents from semester to semester a variety of important topics in the academic study of religion. *Prerequisite:* RELI 1000.

4900. Independent Study in Religion. 1-3 (Max. 6). Primarily for juniors and seniors who can benefit from independent study of topics in religious studies not covered in course offerings. Guidance provided by faculty member in the appropriate field. *Prerequisites:* 9 hours in religious studies and consent of instructor.

Science and Mathematics Teaching Center (SMTC)

406 Wyoming Hall, 766-6381

FAX: (307) 766-3792

Web site: smtc.uwyo.edu

Director: Robert Mayes

Outreach Coordinator: Sylvia Parker

The Science and Mathematics Teaching Center (SMTC) is an intercollegiate, interdisciplinary program committed to excellence in science, mathematics, and technology education. Governed jointly by the Colleges of Education and Arts & Sciences, the SMTC, in cooperation with the Wyoming Department of Education and the Professional Teaching Standards Board (PTSB), serves as a science and mathematics education resource and professional development center for the state. The affiliate faculty for SMTC is comprised of faculty members from the College of Education, the College of Arts and Sciences, the College of Agriculture, and the College of Engineering and Applied Science.

The SMTC provides extensive off-campus professional development that serves Wyoming communities, administrators, teachers, students and school districts. SMTC in-service and extension courses, workshops, institutes and conferences are provided with the principal purpose of improving science and mathematics teaching in Wyoming.

The SMTC offers three graduate degree program options: the Master of Science Teaching, designed for secondary teachers; the Master of Science of Natural Science in Middle Level Math or Middle Level Science, designed for elementary, middle, and general science and mathematics teachers; and the Master of Science in Natural Science (Natural Science Education), designed for students that are completing the first year of their graduate program at Teton Science School. For further information on these programs, courses, and admission, please refer to the *Graduate Bulletin*.

Please see the SMTC section under the College of Education in this *Bulletin* for course information.

Sociology

406 Ross Hall, 766-3342

FAX: (307) 766-3812

Web site: www.uwyo.edu/Sociology

Department Head: Donna Barnes

Professors:

DAVID ASHLEY, B.A. University of York, England 1972; Ph.D. University of Pittsburgh 1979; Professor of Sociology 1996, 1987.

BURKE D. GRANDJEAN, B.A. Rice University 1971; M.A. University of Texas 1973; Ph.D. 1976; Professor of Statistics and Sociology 1990; Executive Director, Wyoming Survey and Analysis Center 2004.

GARY D. HAMPE, B.A. St. Olaf College 1962; M.A. University of Iowa 1967; Ph.D. 1970; Professor of Sociology 1988, 1969.

MALCOLM D. HOLMES, B.A. University of Texas at El Paso 1974; M.A. 1976; Ph.D. University of Texas at Austin 1982; Professor of Sociology 1999, 1991.

RICHARD S. MACHALEK, B.S. Texas A&M University 1969; M.A. University of Texas 1972; Ph.D. 1975; Professor of Sociology 1988.

PATRICIA A. TAYLOR, B.A. Vanderbilt University 1970; M.A. University of Texas 1972; Ph.D. 1976; Professor of Sociology 1990; Research Professor, Wyoming Survey and Analysis Center 2007.

Associate Professors:

DONNA A. BARNES, B.A. Louisiana State University 1975; M.A. University of Texas 1978; Ph.D. 1982; Associate Professor of Sociology 1993, 1991.

QUEE-YOUNG KIM, B.A. Seoul National University 1965; M.A. University of Houston 1968; M.A. Harvard University 1970; Ph.D. 1975; Associate Professor of Sociology 1984, 1978.

ANNA ZAJACOVA, B.A. Hunter College (CUNY) 1999; M.S. Rutgers 2004; Ph.D. Princeton University 2006; Assistant Professor of Sociology 2009.

MARGARET M. ZAMUDIO, B.A. University of California, Los Angeles 1989, M.A. 1991; Ph.D. 1996; Associate Professor of Sociology 2008, 2003.

Adjunct Professors:

Anatchkova, Davidson, Heinlein, Inman, Massey, Woolcott

Professors Emeriti

Audie Blevins, Katherine Jensen

Sociology is the scientific study of group life and the investigation of the social causes and consequences of human behavior. This discipline occupies a central position in the social sciences and covers the full scope of social behaviors from intimate interactions between individuals to relationships among entire societies. Most importantly, sociology invites students to analyze those features of social existence that we are most likely to take for granted. As such, sociological training imparts critical and analytical skills of great value in virtually all aspects of modern life.

Much of the applied knowledge employed in diverse fields such as communications, social work, business management, family life, health care, urban planning, government, education, religion and the administration of justice derives from basic sociological research. Consequently, sociological training provides an excellent background for occupations connected with these fields. In addition, an undergraduate degree in sociology prepares many students for advanced study in law, education, business, public administration, social work, pastoral work, health care and other professions.

The department provides a comprehensive sociology education both for students who elect to terminate their formal education with the B.A. and for those who plan to pursue advanced degrees in sociology or a related social science. Fundamentally, however, the department aspires to prepare students for informed participation in an increasingly complex world.

Undergraduate Major

In addition to University and College requirements, the following are minimum requirements for the undergraduate major in sociology leading to the Bachelor of Arts degree.

Thirty-one credit hours are required to earn a major in sociology. These courses are listed below. This includes 10 hours of required Foundation Courses, 12 hours of Core Courses, and 9 hours of sociology elective courses. Of the 12 hours of required Core Courses, students must take one course each from any 4 of the 5 Core Course areas identified below. Grades of "C" or better must be earned in all 31 hours of coursework in order to be counted toward the major.

The interdisciplinary Social Sciences (B.A. or B.S.) degree is described in the "Distributed Majors Degree Programs" section in the College of Arts and Sciences section of the *General Bulletin*. It allows students to receive a B.A. in Social Science through the Department of Sociology and the College of Arts and Sciences.

Foundation Courses

SOC	1000	.....	3
SOC	3900	.....	3
SOC	4090	.....	4
Total Hrs			10

Core Courses:

Complete four courses, one each in any four of the following five areas:

Area A: Society and Inequality

SOC	2350	.....	3
SOC	3500	.....	3
SOC	4000	.....	3
SOC	4160	.....	3

Area B: Social Organization and Processes

SOC	4020	.....	3
SOC	4500	.....	3
SOC	4600	.....	3
SOC	4650	.....	3

Area C: Social Institutions

SOC	3200	.....	3
SOC	3605	.....	3
SOC	3880	.....	3
SOC	4140	.....	3
SOC	4250	.....	3

Area D: Individual and Society

SOC	2400	.....	3
SOC	3110	.....	3
SOC	3150	.....	3
SOC	3400	.....	3

Area E: Global Comparative Sociology

SOC	2100	.....	3
SOC	4110	.....	3
SOC	4300	.....	3
SOC	4370	.....	3

Total Required Hrs. 12

Also required is STAT 2070 or SOC 2070

Elective courses:

Complete 9 additional hours of sociology courses. Electives may be used either to develop additional expertise in an area of interest or to broaden the students sociological training.

Total Elective Hrs. 9

Undergraduate Minor

The sociology minor requires a total of 18 sociology credits including SOC 1000. At least 9 of these 18 hours must be upper-division sociology credits.

Graduate Degrees

The graduate program leading to the Master of Arts degree in sociology is described in the *Graduate Bulletin*.

Honors in Sociology

Sociology majors with a 3.2 overall GPA, a 3.5 GPA in sociology courses and two 5000-level sociology courses graduate with honors in sociology. The department also nominates students for membership in *Alpha Kappa Delta*, the international honorary society for sociology. Selection is based on academic excellence.

Sociology (SOC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Sociological Principles. 3. [C2↔CS] Provides a survey of the discipline and foundation for other sociology courses. Explores major areas of interest — ranging from small groups and families to bureaucracies and social movements. Introduces significant concepts and theories, along with tools of social research. Gives attention to contemporary American society, as well as comparative and historical material.

1100. Social Problems and Issues. 3. [C2↔CS] Explores various approaches to defining and identifying social problems and applies basic sociological concepts and methods to analysis of selected social problems and issues.

1350. American Indians in Contemporary Society. 3. [(none)↔CS, D] Survey lecture course. Examines social and cultural issues and concerns of American Indians both on and off the reservations. Additionally, the status of American Indian people within the dominant society and culture are explored. Cross listed with AIST 1350.

2070 [2000]. Introductory Statistics for the Social Sciences. 4. [M2↔QB] Presents central ideas of descriptive statistics and statistical inference, as applied to questions in social sciences. Includes graphs, averages, sampling, estimation, hypothesis-testing and relationships between variables. Introduces associated computer skills. Credit cannot be earned in more than one of STAT 2010, 2050, 2070, 4220, 5520. Cross listed with STAT 2070. *Prerequisites:* MATH 1000, 1400 or equivalent.

2100. Social Change. 3. [C2,G1,W2↔WB, G] Studies causes, processes and consequences of structural transformations in historical and comparative perspective. Reviews and assesses forces that account for sociological changes. Explores social change globally as well as in the U.S. Cross listed with INST 2100. *Prerequisite:* SOC 1000. (Normally offered spring semester)

2140. African Societies. 3. [C2, G1↔G] Surveys African societies in their traditional and modern settings. Explores structure, function, and process in African social institutions (family, kinship, gender, economy, politics, education, law, and religion). Analyzes impact of Western contact of these institutions and other internal and external processes that have culminated in the present African condition. Cross listed with AAST 2140.

2200. Sociology of Human Sexuality. 3. [C2↔(none)] Theoretically and empirically analyzes sexual attitudes and behaviors on the social level. Focuses on American society. *Prerequisite:* SOC 1000, PSYC 1000 or ANTH 1200.

2350. Race and Ethnic Relations. 3. [C2↔D] Examines social relations among majority and minority groups by devoting particular attention to race and ethnic relations in the U.S. Encompasses sociological approach to this topic, which emphasizes power structures, economic relationships and cultural traditions historically and today. Devotes attention to social psychological issues, such as prejudice, and social structural issues, such as class inequality. *Prerequisite:* SOC 1000 or ANTH 1200.

2400 [3300]. Criminology. 3. Generally introduces the nature of crime, statistics on crime, types of criminal behavior and explanations of crime. Cross listed with CRMJ 2400. *Prerequisite:* SOC 1000 or equivalent. (Normally offered once a year)

3050. Japanese Society. 3. [C2, G1↔G] Studies cultural traditions of Japan from historical literature. Reviews and assesses influence of cultural values upon social, political and economic structures and behavioral patterns. *Prerequisite:* SOC 1000, ANTH 1100 or equivalent social science course. (Offered once a year)

3100. Chinese Society. 3. [C2, G1↔G] Reviews origins and consequences of Chinese revolution in comparative and cultural perspectives. Discusses influence of historical traditions and social structure on individual lives and behavioral patterns. Cross listed with INST 3100. *Prerequisite:* SOC 1000.

3110 [2110]. Self and Society. 3. Considers social behavior at the micro level, emphasizing the influence of society on the individual's thoughts, emotions and behaviors. Topics such as the development of the self over the life course, the self in social interaction, and the role of attitudes and emotions in social interaction are discussed. *Prerequisite:* SOC/PSYC 1000. (Offered based on sufficient demand and resources)

3150. Collective Behavior and Social Movements. 3. Analyzes and explains fads, fashions, rumors, riots and mass behavior in light of theoretical frameworks. Studies social movements including blacks, women, labor, religions and students. Assesses meaning of contemporary revolutionary movements in Third World countries against sociological interpretations of historic French, Russian and Chinese Revolutions. *Prerequisite:* SOC 1000 or equivalent.

3200. Sociology of Religion. 3. Introduces various ways sociologists interpret religion. Explores the nature of relationships between religion and society. *Prerequisite:* SOC 1000 or equivalent.

3320 [2320]. Family Violence. 3. [C2↔(none)] Prevalence, types and causes of family violence are examined with an emphasis on a sociological understanding. Theories of violence are applied to the conflict that exists within the family institution such as woman battering, courtship conflict and child abuse. Cross listed with CRMJ 3320. *Prerequisite:* 6 hours of sociology or equivalent social science (including SOC 1000). (Normally offered summer or fall semester)

3400 [4200]. Deviant Behavior. 3. [C2↔(none)] Examines theory and research relevant to understanding deviant behavior in general and specific types of individual and sub-cultural deviancy. Cross listed with CRMJ 3400. *Prerequisite:* SOC 1000 or equivalent.

3500. Sociology of Gender. 3. [C2, W2↔WB] Investigates causes and consequences of gender construction within social institutions such as family, government, education, religion, and economy. Analyzes social structural factors affecting support for gender differentiation, e.g. social values, position in hierarchies of control, access to paid employment, and gendered life experiences. Examines differences by race, social class and sexuality. *Prerequisite:* SOC 1000 or junior/senior standing.

3550. Medical Sociology. 3. Considers sociological contributions to diagnosis and treatment of illness. Studies social organization of health professions and agencies. *Prerequisite:* SOC 1000 or equivalent.

3605. Sociology of Education. 3. An introductory overview of the principal areas of inquiry in the field. Students learn relevant theories and concepts, principal methodological approaches as well as important current issues in education. Comparative analysis may focus on historical comparisons, national/global comparisons, U.S. regional, and/or variant educational systems at the local level. *Prerequisite:* SOC 1000 or equivalent.

3650. The Community. 3. [C2↔(none)] Analyzes structure, functions and trends of the community. *Prerequisite:* SOC 1000 or equivalent. (Offered based on sufficient demand and resources)

3670. African Diaspora. 3. [C2, G1↔CS, G] Examines the process through which aspects of African culture have endured in Diaspora. Analyzes the social relations between Diaspora Africans and non-African populations in North and South America, the Caribbean, Britain, Asia and the Mediterranean. Discusses cultural hybridization ("creolization") as a product of culture contact. Cross listed with AAST 3670. *Prerequisites:* AMST 2110, ANTH 1200, ENGL 2190, SOC 1000, SOC 2140, any AAST course, or junior/senior standing.

3800. Chicanas/os in Contemporary Society. 3. [(none)↔CS, D] Focuses on three major movements within the Chicana/o community; labor, nationalism, and feminism. Students will assess these three movements to determine what role they have played in transforming the social conditions and political identity of the Chicana/o and Latina/o population in the US. Cross listed with CHST/WMST 3800. *Prerequisite:* CHST 1100 or SOC 1000 or WMST 1080.

3880. Political Sociology. 3. Study of political theory, political organization, political mobilization, the state, nation-building, national identity, post-nationalism, the relationship between the state and markets, historic formation of the nation-state, and the changing role of the state in a global context. *Prerequisite:* SOC 1000, 3700 or junior/senior standing.

3900 [3700]. Sociological Theory. 3. [C2↔(none)] Examines the emergence and development of sociological theory in the writings of thinkers such as Marx, Durkheim, and Weber. Explores continuities and discontinuities between the classical period of sociological theory and contemporary schools such as functionalism, conflict theory, neo-Marxian theories, symbolic interactionism, phenomenology, and rational choice/exchange theory. *Prerequisite:* SOC 1000.

4000. Social Inequality. 3. [C2↔(none)] Focuses on structure and consequences of unequal access to political, economic and prestige benefits in American society and the world. Critically examines institutional arrangements that perpetuate and are supported by inequality, as well as patterns of social mobility. *Prerequisite:* SOC 1000 or equivalent.

4020 [4560]. Sociology of Work. 3. [C2↔(none)] Examines social organization of work—especially in response to change in technology, demands for equal opportunity, size and goals of firms and desires for meaningful work. Historically and comparatively analyzes work-life experiences shaping of labor markets and role of collective action. Explores impact of the labor process on distribution of society's material and symbolic rewards. Dual listed with SOC 5020. *Prerequisite:* SOC 1000, MGT 3210 or ECON 1010.

4070. Causal Models. 3. Applications of least-squares and iterative maximum-likelihood methods for drawing cause and effect conclusions from nonexperimental data. Topics include regression-based path analysis, reciprocal causation, confirmatory factor analysis, measurement error, and structural equation models with unmeasured (latent) variables. *Prerequisites:* one of STAT 3050, 4010, 5050, 5060, 5070, 5080 or equivalent (regression methods).

4090 [2090, 2050]. Sociological Research. 4. [M3↔(none)] Considers basic research methods with focus on both the conduct and analysis of social research. Explains the relationship between methods of research and results of research. Requires students to participate in analyzing and presenting group research projects. Integrates sociological concepts, theories and substantive areas into the research process. *Prerequisites:* SOC 1000, STAT 2070 or equivalent; junior or senior standing.

4110. Sociology of International Development. 3. [C2, G1, W3↔WC, G] Surveys development studies and rural change, including case studies of deliberate change efforts toward industrialization. Includes peasant modes of food production, daily life in subsistence, agriculture, shifts to commercial agriculture and global economy, ethical and critical issues of induced change and different approaches to development process and outcomes. *Prerequisites:* SOC 1000 or ANTH 1200; SOC 2100 recommended. (Offered once a year).

4140. [4100] The Family. 3. [C2↔(none)] Two major themes of the course are change experienced by the family institution and the centrality of the family in America today. Subjects that are covered include: A brief history of the family in the U.S., kinship, family structure, mate-selection, marriage, divorce and socialization. Dual listed with SOC 5140. *Prerequisite:* 6 hours in sociology (including SOC 1000) and at least junior standing. (Offered fall semester)

4160 [4050]. Sociology of Aging. 3. [C2↔(none)] The process of aging from the individual to the societal level is the focus of the course. Consequences of this process such as the increase in the number of elderly, retirement and health are examined from the major social institutions, the relationships between these institutions and American society as a whole. Dual listed with SOC 5160. *Prerequisite:* 6 hours of sociology (including SOC 1000) and at least junior standing. (Offered based on sufficient demand and resources)

4250. Sociology of Law. 3. [C2, W3↔(none)] A consideration of sociological concepts such as inequality, stratification, social control and social change in an analysis of the law and legal institutions. Topics include: the role of the police, lawyers, judges, and juries; race, sex, age, and sexuality discrimination and civil rights; free speech, and toxic torts. Cross listed with CRMJ 4250. *Prerequisites:* SOC 1000 and upper division status.

4270. Discrimination and the Law. 3 (Max. 6). A sociological examination of specific examples of discrimination and justice within the law and the legal system. Topics will routinely vary and may include race, gender, religion, cultures or sexuality. Class may be repeated for credit when topics differ. Cross listed with CRMJ 4270. *Prerequisites:* SOC 1000 and junior status.

4300. The World System. 3. [G1↔(none)] Analyzes structure of political and economic interdependence among nation-states. Reviews and assesses theoretical approaches to explaining changing structure of inequality, power, war and peace. Dual listed with SOC 5300. Cross listed with POLS 4300 and INST 4300. *Prerequisite:* SOC 1000, ANTH 1100 or equivalent social science course. (Normally offered once a year)

4370. Global Political Economy. 3. [(none)↔G] Examines the interaction of politics and the economy at the global level. Evaluates how political and economic decisions of one country or groups of countries affect institutions and life circumstances in others. Assesses the causes of consequences of globalization as rooted in political economy. Cross listed with INST 4370. *Prerequisites:* SOC 1000 and junior standing or SOC 2100.

4400. Women and Work. 3. [C2, W3↔(none)] Surveys general patterns of women's paid and unpaid work in the U.S. and abroad. Offers reconceptualizations of work's meaning in women's lives, as well as debates surrounding comparable worth, pay equity, women's work experience and women in the world economy. Cross listed with WMST 4400, dual listed with SOC 5400. *Prerequisite:* 6 hours of women's studies or sociology.

4500. Sociology of Organizations. 3. Considers questions of organizational structure, decision-making, work situation and organizational environment across various types of industrial settings and cultures. Emphasizes transactions between organizations and their various environments and effects of these transactions for program implementation, as well as understanding of organizational effectiveness in terms of rational, institutional and societal perspectives. *Prerequisite:* SOC 1000, COJO 1030 or 1040.

4540. Women, Crime and the Law. 3. [W3, C2↔(none)] Addresses status of women as offenders and as victims in society and in the criminal justice system. Considers special role of women as professionals in the criminal justice system. Cross listed with CRMJ/WMST 4540. *Prerequisite:* WMST/SOC 1080, 3500 or SOC 2400.

4600. Global Population Issues. 3. [G1, M3↔(none)] Analyzes U.S. and world populations, emphasizing implications of population trends. Dual listed with SOC 5600. Cross listed with INST 4600. *Prerequisites:* SOC 1000 or equivalent and SOC 2070 or STAT 2070 or equivalent.

4650. Urban Sociology. 3. [C2↔(none)] Considers growth of metropolis and its impact upon modern life. Dual listed with SOC 5650. *Prerequisite:* SOC 1000 or equivalent. (Offered based on sufficient demand and resources)

4680. Shanghai: Past & Present. 3. [(none)↔CS, G] Lectures, fieldtrips, and other cultural activities are all incorporated into the curriculum to help students learn about the political, economic and cultural development in 21st century China. Cross listed with INST 4680. *Prerequisites:* none.

4700. Science and Modern Society. 3. [W3, C2↔(none)] Leads students to consider how science is a social phenomenon in its practice and in its knowledge by examining the history, culture and methods in science. *Prerequisite:* 6 hours of social science.

4850. Conference. 1-6 (Max. 6). Considers topics of current sociological interest in consultation with a faculty member. *Prerequisites:* senior standing and 15 hours of sociology.

4890. Special Topics in _____. 1-3 (Max. 6). Accommodates seminar series and/or course offering by visiting faculty whose subject matter is not included in other courses. *Prerequisites:* junior standing and consent of department. (Offered based on sufficient demand and resources)

4900. Seminar. 3-6 (Max. 6). Considers special topics of current sociological interest. May be repeated for maximum of 6 hours credit when topic of seminar is different. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

4950. Seminar. 3-6 (Max. 6). Considers special topics of current sociological interest. May be repeated for maximum of 6 hours credit when topic of seminar is different. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

4970 Sociology Internship. 3. Students gain practical experience in the application of principles learned in sociology courses. Students work with the internship coordinator to select a site and faculty supervisor; intern approximately six hours per week in the host organization; and complete readings and written assignments which reflect the student's work. Satisfactory/Unsatisfactory Only. *Prerequisites:* sociology major or minor with a minimum of junior standing and the completion of SOC 1000, and two additional sociology courses.

Department of Statistics

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Web site: www.uwyo.edu/stats

Department Head: Richard Anderson-Sprecher

Professors:

RICHARD ANDERSON-SPRECHER, B.A. Carleton College 1974; M.A. University of Minnesota 1976; Ph.D. University of Iowa 1990; Professor of Statistics 2006, 1990.

STEPHEN L. BIEBER, B.S. University of California-Davis 1971; M.A. University of California-Berkeley 1977; Ph.D. 1979; Professor of Statistics 1990, 1979.

KENNETH G. GEROW, B.S. University of Guelph, Canada 1981; M.Sc. 1984; Ph.D. Cornell University 1992; Professor of Statistics 2007, 1993.

BURKE GRANDJEAN, B.A. Rice University 1971; M.A. University of Texas-Austin 1973; Ph.D. 1976; Professor of Statistics and Sociology 1990; Executive Director, WYSAC 2004.

Associate Professors:

SNEHALATA V. HUZURBAZAR, B.A. Grinnell College 1984; M.A. Vanderbilt University 1988; Ph.D. Colorado State University 1992; Associate Professor of Statistics 2001, 1995.

TIMOTHY J. ROBINSON, B.S. James Madison University 1989; M.S. Virginia Polytechnic Institute and State University 1994; Ph.D. 1997; Associate Professor of Statistics 2006, 2000.

SHAUN S. WULFF, B.S. Montana State University 1991; M.S. 1994; Ph.D. Oregon State University 1999; Associate Professor of Statistics 2005, 1999.

Assistant Professors:

JARRETT J. BARBER, B.S. Northern Arizona University 1990; M.S. 1992, 1997; Ph.D. North Carolina State University 1997; Assistant Professor of Statistics 2006.

KIONA OGLE, B.S. Northern Arizona University 1997; M.S., Ph.D. Duke University 2003; Assistant Professor of Botany and Statistics, 2006.

Academic Professional Lecturer:

CHRISTOPHER R. PRETZ, B.A. University of Northern Colorado 1996; M.A. University of Colorado at Boulder 1999, Ph.D. University of Northern Colorado 2003; Academic Professional Lecturer 2004.

Adjunct Professors:

Hampe, Legg, L. McDonald, T. McDonald, Manly

Emeriti Faculty:

Robert S. Cochran

The curriculum in statistics includes a firm foundation in mathematics and computer science, along with an area of application as a minor in addition to course work in statistical theory and methodology. The nature of statistical work is to design and analyze research projects through the application of the principles of mathematics, computer science, and statistics. The student who likes to make valid inferences from empirical data will find the field of statistics fascinating and rewarding.

The study of statistics as a separate professional field is comparatively recent. The wide demand for graduates with special training in research and development techniques has fostered development of statistical curricula in colleges and universities. A pioneer in this field, the University of Wyoming is one of the few schools in the nation where a coordinated undergraduate training program in statistics is available.

Graduates with statistical training are employed in a broad spectrum of areas which include the business world, the sciences (social, biological, physical and health), as well as engineering and education. For this reason, an area of application is required of each student.

The statistics department also offers graduate programs leading to a minor in statistics, and to a Master of Science (Plan A, Plan B), and Doctor of Philosophy in statistics. For information, see the *Graduate Bulletin*.

In addition to university and college requirements, requirements for statistics majors include:

A. Statistics	..... at least 30
2010/2050/2070/4220.....	3-4
2110/3050/5050/5060/5070/5080	3
4015, 4025, 4255, 4265.....	12
Optional from 4045, 4070, 4115, 4155, 4300, 4350, 4360, 4370, 5320	9
Senior thesis 4870.....	3
B. Mathematics 2200, 2205, 2210, 2250	15
C. Computer science 1010 and 1030	6
D. Minor area	at least 18
E. Electives—chosen so that at least 42 hours are at the 3000/4000/5000 level	

Total hours: at least 120

Typical Freshman Year for Statistics

Majors

ECON	1010	3
ENGL	1010	3
MATH	2200	4
POLS	1000	3
Biological, physical or earth science	4	
Physical Activity and Health requirement	1	

Total Hrs. 18

ECON	1020.....	3
University Studies.....	3	
MATH	2205	4
STAT 2010/2050/2070/4220.....	3-4	
Biological, physical, or earth science	4	

Total Hrs. 17-18

Note: For several entry level courses such as STAT 2010, 2050, 2070 and 4220, a student cannot receive credit for more than one of these courses. The same is true for the second courses 2110, 3050 and 5050, 5060, 5070, 5080.

Statistics Minor

The following courses are required for a statistics minor:

MATH	1400	3
STAT	2010/2050/2070/4220	3-4
STAT	3050	3

And 9 additional hours from the following:

STAT	4015.....	3
STAT	4025	3
STAT	4045	3
STAT	4070	3
STAT	4115	3
STAT	4155.....	3
STAT	4255.....	3
STAT	4265	3
STAT	4350	3
STAT	4360	3
STAT	4370	3
STAT	4300/5300	3
STAT	5320	3

Total Hrs. 18-19

Statistics (STAT)

A computerized prerequisite check is run prior to the start of the fall and spring semesters. Students who are pre-registered for a 2000-level STAT course but have not satisfied the prerequisites at the time of the check will be automatically dropped from the course.

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2000. Statistics and the World. 3. [M3↔QB]

Discusses statistical reasoning and methods as related to today's society. Emphasizes ideas rather than specific techniques. Focuses on real examples of the use (and misuse) of statistics. Includes sampling, experimentation, descriptive statistics, elementary probability and statistical inference. *Prerequisite:* grade of C or better in MATH 1000, 1400, or equivalent.

2010. Statistical Concepts for Business and Management Science. 4. [M2↔QB]

Provides majors in various departments of the College of Business with training in basic statistical concepts, emphasizing application to business problems. Credit cannot be earned in more than one of the following courses: STAT 2010, 2050, 2070, 4220 and 5000. *Prerequisite:* grade of C or better in MATH 1400.

2050. Fundamentals of Statistics. 4. [M2↔QB] Presents central ideas and fundamental techniques of statistical inference on applications in the biological sciences. Includes probability models and inferences for means, variances and parameters of discrete distributions. Introduces statistical computer packages in biweekly labs. Credit cannot be earned in more than one of the following courses: STAT 2010, 2050, 2070, 4220 and 5000. *Prerequisite:* grade of C or better in MATH 1000, 1400, or equivalent.

2070. Introductory Statistics for the Social Sciences. 4. [M2↔QB] Presents central ideas of descriptive statistics and statistical inference, as applied to questions in social sciences. Includes graphs, averages, sampling, estimation, hypothesis-testing and relationships between variables. Introduces associated computer skills. Credit cannot be earned in more than one of STAT 2010, 2050, 2070, 4220, 5000. *Prerequisite:* grade of C or better in MATH 1000, 1400, or equivalent.

2110. Statistical Methods for Business and Management Science. 3. [M3↔(none)] Provides majors in various departments of the College of Business with training in use of statistical analysis techniques as they apply to business problems. Credit cannot be earned in more than one of the following: STAT 2110, 3050 and 5050, 5060, 5070, 5080. *Prerequisite:* STAT 2010.

3050. Statistical Methods - General. 3. [M3↔(none)] Provides undergraduate majors in the Colleges of Arts and Sciences, Agriculture and Education with training in statistical methodology for multiple variable situations. Integrates computer analysis packages such as MINITAB, SAS and SPSSX into statistical topics. Credit cannot be earned in more than one of the following courses: STAT 2110, 3050 and 5050, 5060, 5070, 5080. *Prerequisite:* STAT 2050, 2070 or equivalent.

4015 [4010, 4410]. Regression Analysis. 3. Contains standard topics, as well as some newer and more unconventional ones. Oriented towards analysts who use computer packages for problem solutions. Includes balance of application and theory. Dual listed with STAT 5015. *Prerequisite:* STAT 3050 or equivalent.

4025 [4020, 4310]. Design and Analysis of Experiments I. 3. Reviews design and analysis of one-factor experiments and introduces multifactor experiments, Latin squares, nested designs and random effects. Includes topics such as polynomial response curves, trend analysis, split plots and incomplete blocks as time permits. Dual listed with STAT 5025. *Prerequisite:* choice of STAT 3050 or equivalent.

4045 [4040]. Categorical Data Analysis. 3. Applied methods for analyzing associations when some or all variables are measured in discrete categories, not continuous scales. Topics include the binomial, multinomial, and Poisson probability models, parameter estimation and hypothesis-testing about proportions, measures of association and tests for contingency tables, logistic regression, and log-linear models. Dual listed with STAT 5045. *Prerequisite:* STAT 2110, 3050, 5050, 5060, 5070 or 5080.

4070. Causal Models. 3. Applications of least-squares and iterative maximum-likelihood methods for drawing cause and effect conclusions from nonexperimental data. Topics include regression-based path analysis, reciprocal causation, confirmatory factor analysis, measurement error, and structural equation models with unmeasured (latent) variables. Cross listed with SOC 4070. *Prerequisite:* one of STAT 3050, 4015, 5050, 5060, 5070, 5080 or equivalent (regression methods).

4115 [4110]. Time Series Analysis and Forecasting. 3. An applied introduction to time series and forecasting. Brief coverage of time series regression, decomposition methods, and smoothing will lead into a more detailed coverage of Box-Jenkins (ARIMA) modeling. Computer analyses using MINITAB and SAS will be an important part of the course. Cross listed with ECON 4115; dual listed with STAT 5115. *Prerequisites:* STAT 3050 or equivalent; STAT 4015/5015 recommended.

4155 [4150]. Fundamentals of Sampling. 3. Develops methodology of simple random sampling, stratified sampling, and multistage sampling. Provides applications related to physical, social, and biological sciences. Discusses single and two-variable estimation techniques. Presents estimation based on subsamples from subpopulations. Dual listed with STAT 5155. *Prerequisite:* choice of STAT 2010, 2050, 2070 or equivalent.

4220 [4020]. Basic Engineering Statistics. 3. [M3↔(none)] Introduces probability models, properties of distributions, statistical inference and development of statistical models for physical and engineering sciences. Credit cannot be earned in more than one of the following courses: STAT 2010, 2050, 2070, 4220 and 5000. *Prerequisite:* MATH 2205, 2355 or equivalent.

4255 [4250]. Mathematical Theory of Probability. 3. [M3↔(none)] Calculus-based. Introduces mathematical properties of random variables. Includes discrete and continuous probability distributions, independence and conditional probability, mathematical expectation, multivariate distributions and properties of normal probability law. Dual listed with STAT 5255; cross listed with MATH 4255. *Prerequisite:* grade of C or better in MATH 2210. (Offered fall semester)

4265 [4260, 4010]. Introduction to the Theory of Statistics. 3. Presents derivations of theoretical and sampling distributions. Introduces theory of estimation and hypothesis testing. Dual listed with STAT 5265; cross listed with MATH 4265. *Prerequisite:* STAT/MATH 4255.

4300. Applied Multivariate Analysis. 3. The application of multivariate statistical methods in behavioral science research. Topics include: multivariate regression, canonical correlation, discriminate analysis, factor analysis and multidimensional scaling. A wide range of computer assistance is incorporated. Dual listed with STAT 5300. *Prerequisite:* STAT 3050 or equivalent.

4350. Survey Construction and Analysis. 3. Examines the issues surrounding the construction (item wording, test theory, and numerical scales), assessment (sampling and psychometrics), and analysis (item analysis, qualitative data analysis, and factor analysis) of survey instruments. Roughly a third of the course is devoted to each of these areas. Dual listed with STAT 5350. *Prerequisite:* STAT 3050.

4360. Spatial Statistics. 3. Emphasis is on a generalized linear model approach to the modeling of continuous data, placing model building and the various kriging methods into a single conceptual framework. Dual listed with STAT 5360. *Prerequisite:* STAT 4015.

4370. Survival Analysis. 3. Introduction to the modeling of time to event data as it arises in epidemiological and medical research. Topics include parametric and non-parametric estimation for censored data without covariates, and for data with covariates, the proportional hazards regression model, additive hazards regression model and parametric regression models. Dual listed with STAT 5370. *Prerequisites:* STAT 4015 and 4025.

4460. Statistical Software [5480]. 1. An introduction to the various statistical software programs currently in use at the University of Wyoming. Topics will include the structure of each language, I/O, programming the basic statistical applications, and a comparison of the other languages. *Prerequisite:* 9 hours in statistics beyond introductory.

4870. Senior Thesis. 3. [W3↔(none)] Encompasses senior thesis research project under faculty member guidance and supervision. Faculty sponsorship must be obtained prior to registration. *Prerequisites:* 18 hours in statistics and senior standing.

4880 [4790]. Problems in Statistics. 1-4 (Max. 9). Encourages individual initiative on part of students who work on extending their knowledge through library research. *Prerequisites:* senior standing, 8 hours in statistics and consent of instructor.

Theatre and Dance
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Web site: uwyo.edu/th&d/
Department Head: Leigh Selting

Professors:

WILLIAM MISSOURI DOWNS, B.S. Northern Michigan University 1977; M.F.A. University of Illinois 1980; M.F.A. University of California-Los Angeles 1988; Professor of Theatre and Dance 2004, 1994.

REBECCA HILLIKER, B.F.A. University of Wisconsin, Milwaukee 1971; M.F.A. University of Wisconsin, Madison 1974; Ph.D. 1984; Professor of Theatre 1997, 1988.

LEE HODGSON, B.A. University of Wyoming 1977; M.A. 1980; M.F.A. California Institute of the Arts 1983; Professor of Theatre and Dance 2000, 1987.

MARSHA F. KNIGHT, B.F.A. University of Utah 1979; M.F.A. 1983; Professor of Theatre and Dance 1998, 1984.

LEIGH SELTING, B.A. University of Nebraska at Kearney 1983; M.F.A. University of Idaho 1985; Professor of Theatre and Dance 1999, 1989.

LOU ANNE WRIGHT, B.A. California State University-Northridge 1990; M.F.A. National Theatre Conservatory 1993; Professor of Theatre and Dance 2007, 1994.

Associate Professors:

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Assistant Professors:

CECILIA ARAGÓN, B.S. McMurry University 1991; M.A. University of New Mexico 1996; Ph.D. Arizona State University 2003; Assistant Professor of Theatre and Dance 2005.

JENNIFER DECKERT, B.F.A. University of Utah 2003; M.F.A. 2005; Assistant Professor of Theatre and Dance 2007.

LAWRENCE JACKSON, B.F.A. University of Southern Mississippi 2000; M.F.A. Florida State University 2007; Assistant Professor of Theatre and Dance 2008.

CASEY KEARNS, B.A. Chadron State College; M.F.A. University of Kansas; Assistant Professor of Theatre and Dance 2005.

ADAM MENDELSON, B.A. Tufts University 1996; M.F.A. University of Nebraska-Lincoln 2004, Assistant Professor of Theatre and Dance 2008.

JOHN O'HAGAN, B.F.A. University of Idaho 1997; M.F.A. 2005; Assistant Professor of Theatre and Dance, 2008.

Adjunct Professor:

Neil F. Humphrey

Academic Professional Lecturer:

PATRICK NEWELL, B.M. University of Indiana-Purdue at Fort Wayne 1992; M.M. 1994, Ph.D. 2003; Academic Professional Lecturer of Theatre and Dance 2007.

Degrees Offered

The Department of Theatre and Dance offers curricula leading to the B.A. degree and the Bachelor of Fine Arts and courses which fulfill a part of University Studies and various colleges' requirements, including the College of Arts and Sciences.

Curricula

Students may not take a course for S/U credit to satisfy course requirements in the major. This does not apply to courses offered for S/U only. Requirements for students majoring in the areas of the department are indicated below.

Theatre

The study of theatre provides students with a broad understanding of the art of theatre appropriate to theatre's position as a fine art in a liberal arts college. The study of theatre is considered to provide a basis for more specialized theatre study in a graduate or professional school. The liberal arts education in theatre together with extensive experience in the production program also provides the foundation for a professional career in theatre, motion pictures, or television drama for those individuals with special desires and abilities. Secondary teaching certification in theatre can be obtained through this program of study.

Dance

The dance concentration within the Department of Theatre and Dance is designed to provide students with a broad foundation in the humanities and specific emphasis in performance and production aspects of dance. Students pursuing this course of study will have opportunities to attain technical competency in ballet and/or modern dance, to perform in yearly dance productions, to obtain practical experience in the fundamentals of teaching dance and to gain experience in technical theatre as an aid to dance production. The program seeks to provide a comprehensive view of dance as an artistically expressive medium, as well as a creative and recreational tool to human expression.

Students completing this program will qualify for more advanced private instruction as well as advanced academic instruction.

Programs

B.A. with Theatre Concentration

These are the required courses for a B.A. with Theatre Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA 1040.....	0.5
THEA 1100.....	3
THEA 1200.....	3
THEA 2010.....	3
THEA 2020.....	3
THEA 2040.....	0.5
THEA 2220.....	3
THEA 2800.....	3
THEA 3730.....	3
THEA 3740.....	3
THEA 3810.....	3
THEA 3820.....	3
THEA 4820.....	3
THEA 4930.....	3
THEA 4940.....	3

Theatre majors are limited to no more than 50 credits in the major field of which a minimum of 15 must be at the 4000-level.

B.A. with Dance Concentration

These are the required courses for a B.A. with Dance Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA 1021.....	1
THEA 1040.....	0.5
THEA 1200.....	3
THEA 1405.....	1
THEA 1420.....	1
THEA 1440.....	1
THEA 1450.....	1
THEA 2040.....	0.5
THEA 2050.....	1
THEA 2200.....	3
THEA 2480.....	1
THEA 3020.....	1
THEA 3100.....	3
THEA 3410.....	1
THEA 3420.....	1
THEA 3430.....	1
THEA 3440.....	1
THEA 3480.....	1
THEA 4010.....	4
THEA 4030.....	4
<i>Plus 8 credits in any combination of 4010 and 4030</i>	
THEA 4200.....	3
THEA 4250.....	2
THEA 4260.....	2
THEA 4880.....	1
BIOL 1010.....	4
HLED 1221.....	2
ZOO 2040.....	4

Bachelor of Fine Arts

This degree program in theatre and dance permits 60-70 credits in the major field. It is designed primarily for students who seek additional professional training in theatre and dance or who wish to enter M.F.A. graduate programs.

Students seeking the professional degree will be expected to meet degree requirements as specified by the College of Arts and Sciences. Students may substitute advanced theatre and dance courses for university electives.

For other requirements consult with the Department of Theatre and Dance.

Bachelor of Fine Arts Theatre/English Concentration

This degree program permits a total of 60-70 credits in the major. It is designed primarily for those desiring to pursue professional education courses and certification to programs.

These are the required courses for a B.F.A. with Theatre/English Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2220	3
THEA	2800	3
THEA	3730	3
THEA	3740	3
THEA	3810	3
THEA	3820	3
THEA	4820	3
THEA	4830	3
THEA	4930	3
THEA	4940	3
ENGL	2000	6
ENGL	4000	9
ENGL	4110 or 4120	3

Bachelor of Fine Arts Acting Concentration (Preprofessional)

This degree program permits a total of 60-70 credits in the major. It is designed primarily for those desiring to pursue additional pre-professional training in theatre and dance or for those preparing to enter M.F.A. graduate programs.

These are the required courses for a B.F.A. with Acting Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3

THEA	1200	3
THEA	1700	2
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2160	2
THEA	2180	3
THEA	2220	3
THEA	3720	2
THEA	3730	3
THEA	3740	3
THEA	3750	3
THEA	3790	3
THEA	3950	3
THEA	4710	3
THEA	4720	3
THEA	4730	2
THEA	4820	3
THEA	4930	3
THEA	4940	3
<i>and three hours from the following:</i>		
THEA	1410	1
THEA	1430	1
THEA	1450	1
THEA	1480	1

Bachelor of Fine Arts Directing and Playwriting Concentration

This concentration permits a total of 60 - 70 credits in the major. It is designed primarily for those desiring to pursue additional pre-professional training in directing and playwriting or for those preparing to enter M.F.A. graduate programs in playwriting or directing.

These are the required courses for a B.F.A. Concentration in Directing and Playwriting:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3
THEA	1200	3
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2220	3
THEA	2800	3
THEA	3500	3
THEA	3730	3
THEA	3740	3
THEA	3790	3
THEA	3810	3
THEA	3820	3
THEA	4500	3
THEA	4820	3
THEA	4830	3
THEA	4930	3
THEA	4940	3
THEA	4990	2
One 2000 level English Creative Writing Course (choose from one of the following):		
ENGL	2050	3

ENGL	2070	3
ENGL	2080	3
One 4000 level English Writer's Workshop:		
ENGL	4050	3

Bachelor of Fine Arts Scenic Concentration (Preprofessional)

Students in the B.F.A. degree program who are completing the Scenic Concentration will have the option of petitioning for permission to serve on the production staff of a departmental production as a designer or technician. Ordinarily, the petition would be submitted to the departmental faculty during the student's junior year and the project would be completed during the student's senior year. This project would be done under THEA 4880 or 4990 for 1 to 3 hours of credit.

These are the required courses for a B.F.A. with Scenic Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040	0.5
THEA	1100	3
THEA	2010	3
THEA	2020	3
THEA	2040	0.5
THEA	2145	3
or		
THEA	2180	3
THEA	2150	3
THEA	2220	3
THEA	2250	3
THEA	2800	3
THEA	2810	3
THEA	2990	3
THEA	3790	3
THEA	3810	3
THEA	3820	3
THEA	3850	2
THEA	4810	3
THEA	4820	3
THEA	4930	3
THEA	4940	3
ART	1005	3
ART	2010	3
ART	2020	3
<i>Recommended Elective:</i>		
ARE	3030	3

Bachelor of Fine Arts Costuming Concentration (Preprofessional)

Students in the B.F.A. degree program who are completing the Costuming Concentration will have the option of petitioning for permission to serve on the production staff of a departmental production as a designer or technician. Ordinarily, the petition would be submitted to the departmental faculty during the student's junior year and the project would be completed during

the student's senior year. This project would be done under THEA 4880 or THEA 4990 for 1 to 3 hours of credit.

These are the required Courses for B.F.A. with Costuming Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040.....	0.5
THEA	1100.....	3
THEA	2010.....	3
THEA	2020.....	3
THEA	2040.....	0.5
THEA	2145.....	3
THEA	2160.....	2
THEA	2180.....	3
THEA	2220.....	3
THEA	2800.....	3
THEA	2990.....	3
THEA	3790.....	3
THEA	3810.....	3
THEA	3820.....	3
THEA	3840.....	3
THEA	3850.....	2
THEA	4845.....	3
THEA	4850.....	3
THEA	4930.....	3
THEA	4940.....	3
ART	1005.....	3
ART	2010.....	3
ART	2020.....	3
FCSC	3174.....	3
	or	
FCSC	3175.....	3
<i>Recommended Electives:</i>		
THEA	2810.....	3
THEA	3160.....	3
THEA	3730.....	3
THEA	4820.....	3

Bachelor of Fine Arts Lighting Concentration (Preprofessional)

Students in the B.F.A. degree program who are completing the Lighting Concentration will have the option of petitioning for permission to serve on the production staff of a departmental production as a designer or technician. Ordinarily, the petition would be submitted to the departmental faculty during the student's junior year and the project would be completed during the student's senior year. This project would be done under THEA 4880 or THEA 4990 for 1 to 3 hours of credit.

These are the required courses for a B.F.A. with Lighting Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1040.....	0.5
THEA	1100.....	3
THEA	2010.....	3

THEA	2020.....	3
THEA	2040.....	0.5
THEA	2145 or.....	3
THEA	2180.....	3
THEA	2220.....	3
THEA	2250.....	3
THEA	2800.....	3
THEA	2900.....	3
THEA	2990.....	3
THEA	3790.....	3
THEA	3805.....	3
THEA	3810.....	3
THEA	3850.....	2
THEA	3890.....	3
THEA	4800.....	3
THEA	4930.....	3
THEA	4940.....	3
ART	1005.....	3
ART	2010.....	3
ART	2020.....	3
<i>Recommended Electives</i>		
THEA	2400.....	1
THEA	4810.....	3
THEA	4820.....	3

Bachelor of Fine Arts Dance Performance Concentration (Preprofessional)

This program permits a total of 71-74 credits in the major. It is designed primarily for students in dance who wish to pursue additional preprofessional training in theatre and dance or for those preparing to enter M.F.A. graduate programs.

These are the required courses for a B.F.A. with Dance Performance Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1021.....	1
THEA	1040.....	0.5
THEA	1100.....	3
THEA	1200.....	3
THEA	1405.....	1
THEA	1420.....	1
THEA	1440.....	1
THEA	1450.....	1
THEA	2040.....	0.5
THEA	2050.....	1
THEA	2160 or.....	2
THEA	2800 or.....	3
THEA	3820.....	1
THEA	2200.....	3
THEA	2450.....	1
THEA	2480.....	1
THEA	3020.....	1
THEA	3100.....	3
THEA	3410.....	1
THEA	3420.....	1
THEA	3430.....	1
THEA	3440.....	1
THEA	3480.....	1
THEA	3490.....	1

THEA	4001.....	2
THEA	4010.....	4
THEA	4030.....	4
<i>(Additional 8 credits in any combination of 4010 and 4030)</i>		
THEA	4200.....	3
THEA	4250.....	2
THEA	4260.....	2
THEA	4700.....	1
THEA	4880.....	1
THEA	4880.....	1
THEA	4950.....	3
	or	
THEA	4990.....	2
THEA	4990.....	1-3
AS	4990.....	1-3
<i>The following courses outside the department are also required:</i>		
BIOL	1010.....	4
HLED	1221.....	2
ZOO	2040.....	4

Bachelor of Fine Arts Dance Science Concentration (Preprofessional)

This program permits a total of 78 credits in the major. It is designed primarily for students in dance who wish to pursue additional preprofessional training in theatre and dance or for those preparing to enter M.F.A. graduate programs.

These are the required courses for a B.F.A. with Dance Science Concentration:

Certain substitutions may have to be made and all scheduling of classes should be discussed with an adviser.

THEA	1021.....	1
THEA	1040.....	0.5
THEA	1100.....	3
THEA	1200.....	3
THEA	1405.....	1
THEA	1420.....	1
THEA	1440.....	1
THEA	1450.....	1
THEA	2040.....	0.5
THEA	2050.....	1
THEA	2200.....	3
THEA	2480.....	1
THEA	3020.....	1
THEA	3100.....	3
THEA	3410.....	1
THEA	3420.....	1
THEA	3430.....	1
THEA	3440.....	1
THEA	3480.....	1
THEA	4010.....	4
THEA	4030.....	4
<i>(Additional 8 credits in any combination of 4010 and 4030)</i>		
THEA	4200.....	3
THEA	4250.....	2
THEA	4260.....	2
THEA	4700.....	1
THEA	4880.....	1

THEA	4990	.....*	3
*This includes 1 credit of Independent Study Research Methods and 2 credits in Senior Research Project			

The following courses outside the department are also required:

BIOL	1010	.....	4
KIN	3050	.....	2
ZOO	2040	.....	4
PSYC	1000	.....	4
FCSC	1140 or	.....	2
FCSC	1141	.....	3
KIN	2030 or	.....	3
KIN	3034	.....	3
KIN	3037 or	.....	3
KIN	3038	.....	3
Additional upper-division required course work (minimum 6 hours from the following courses):			
KIN	3021	.....	4
KIN	3040	.....	3
KIN	3042	.....	3
FCSC	3145	.....	3
FCSC	4147	.....	3
PSYC	3120	.....	3
PSYC	3250	.....	3
PSYC	4070	.....	3

Minor Programs

The following courses are required for a minor in Theatre:

THEA	1040	.....	0.5
THEA	1100	.....	3
THEA	1200	.....	3
THEA	2010	.....	3
THEA	2020	.....	3
THEA	2040	.....	0.5
THEA	2220	.....	3
THEA	2800 or	.....	3
THEA	3810 or	.....	3
THEA	3820	.....	3

Plus 3 hours of electives in Theatre and Dance (must be 4000 level or above)

The following courses are required for a minor in Dance:

THEA	1040	.....	0.5
THEA	1410	.....	1
THEA	1420	.....	1
THEA	1430	.....	1
THEA	1440	.....	1
THEA	1480	.....	1
THEA	2040	.....	0.5
THEA	2200	.....	3
THEA	3410	.....	1
THEA	3420	.....	1
THEA	3430	.....	1
THEA	3440	.....	1
THEA	4010	.....	2
THEA	4030	.....	2
THEA	4250	.....	2

Plus 3 hours of electives in Theatre and Dance (must be 4000 level or above)

Scholarships

A number of scholarships are available to interested majors in theatre or within the dance option. The University Theatre also maintains a summer company. Applications should be sent to the Department of Theatre and Dance, Dept. 3951, 1000 E. University Ave., Laramie, WY 82071.

Departmental Activities/Organizations

The department sponsors one of the largest all-student activities on campus. Nearly 250 students take part in its productions each season. All students are eligible to participate in its productions through auditions.

Productions are mounted in the Center for the Fine Arts which includes a flexible pro-scenium theatre and an experimental-studio theatre complete with scene and costume support facilities.

Auditions, open to all university students, are publicly announced for each production. Qualified students may receive credit in performance and production areas (THEA 2050).

The Wyoming Summer Theatre presents a season of plays of varying types during the summer session. Theatre majors and minors are urged to spend at least one summer working with this group.

Theatre and Dance (THEA)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

1000. Introduction to the Theatre. 3. [C3◀CA] A broad examination of theatre through the ages. Designed for students with little or no knowledge of theatre history, production, dramatic literature, creativity art, entertainment and censorship from the dawn of history to the 21st century. (Offered both semesters)

1020. Freshman Seminar: Academic and Professional Issues in Theatre. 1. [(none)◀I, L] Introduces first year theatre and dance students to the basic skills necessary to engage in intellectual discourse in their fields. It aims to advance students' analytical, research, and writing skills by studying the meaning and aesthetics of the performing arts through special topics and Aristotle's poetics. *Prerequisites:* none.

1021. Freshman Seminar: Academic and Professional Issues in Dance. 1. [(none)◀I, L] Introduces freshman to the discipline of dance and academic study at the University of Wyoming. Key intellectual and literacy concepts will be introduced, including, but not limited to: critical thinking and analysis, knowledge of the discipline, career options, diversity of the discipline, university and region. *Prerequisites:* none.

1040. Production Crew I. 0.5. Participation in one Departmental production during semester enrolled. Contribute to the preparation and/or actual production of one stage play in the areas(s) of lighting, costume construction, set construction, scenic painting, stage properties, or arts management. Required for all Theatre & Dance freshmen. *Prerequisite:* consent of instructor. (Offered both semesters)

1100. Beginning Acting. 3. [C3◀CA] Explores inner resources of beginning actor and brings these resources to bear upon the art of creating a believable stage image. (Offered both semesters)

1200. Introduction to Stage Design. 3. Introduces and explores visual aesthetic principles as they relate to various aspects of stage design. Studio projects in scene, lighting, and costume design supplement lectures. *Prerequisite:* for other design courses. (Normally offered fall semester)

1300. Centennial Singers. 1-2 (Max. 16). Song and dance troupe performing musical revue throughout Wyoming and the region representing the University of Wyoming. *Prerequisite:* members selected by audition. (Offered both semesters)

1340. Musical Theatre Class Voice. 3. Group instruction in singing techniques and performance styles associated with Musical Theatre. Includes demonstration, brief lectures, discussion, and active participation through singing, analyzing, movement, and scene preparation. *Prerequisites:* none.

1405. Introduction to Pilates Training. 1 (Max. 2). An introduction to Pilates based training, including mat work and exercises on the Reformer. *Prerequisite:* consent of instructor.

1410. Ballet I/I. 1. [C3◀CA] Introduces principles and practices of classical ballet technique.

1420. Ballet I/II. 1. [C3◀CA] Continues studies in classical ballet technique. *Prerequisite:* THEA 1410. (Offered spring semester)

1430. Modern Dance I/I. 1. [C3◀CA] Introduces principles and techniques of modern dance.

1440. Modern Dance I/II. 1. [C3◀CA] Continues studies in modern dance technique. *Prerequisite:* THEA 1430. (Offered spring semester)

1450. Beginning Tap Dance. 1. Explores basic tap techniques and related principles of tap dance composition. (Offered spring semester)

1470. Men's Technique. 1 (Max. 2). Introduces and develops the principles and techniques of movement and dance specific to men. *Prerequisites:* none.

1480. Beginning Jazz. 1. Introduces jazz dance. (Offered fall semester)

1700. Voice for the Actor. 2. Introduction to voice work. Emphasizes breath freedom, flexibility and support for the actor. Methodologies studied include: Fitzmaurice Voicework, Linklater and Lessac systems. *Prerequisites:* none.

2005. Creative Drama in the Classroom.

3. Focuses on K-12 Theatre teaching methods. Students discover teaching methods for integrating improvisation, storytelling, movement/dance, and puppetry into the school curriculum. Students design and implement theatre lessons using these creative drama techniques. To engage real life practice teaching, students are given opportunities to teach creative drama lessons to the class. *Prerequisites:* none.

2010. Theatrical Backgrounds Drama I. 3. First semester of a two-course series. Introduces dramatic literature through the ages.

2020. Theatrical Backgrounds Drama II. 3. Second semester of a one-year course. Continues THEA 2010. *Prerequisite:* THEA 2010.

2040. Production Crew II. 0.5. Continues the “hands-on” production crew experience provided by Production Crew I. Contribute to a Theatre Department production in the area(s) of lighting, costume construction, set construction, scenic painting, stage properties, stage management, or arts management. Required for all Theatre & Dance majors. *Prerequisite:* THEA 1040.

2050. Theatre Practice. 1-2 (Max. 4). Encompasses individually supervised practical training in performance and production. Offered for S/U only. *Prerequisite:* consent of instructor.

2145. Costume Construction. 1-4 (max. 4) This hands-on one semester course emphasizes techniques for costume construction, both machine and hand sewing, and the use of domestic machines and sergers. *Prerequisites:* none.

2150. Drafting for Design. 3. Introduces Design and Technical students to the basics of hand drafting and numerous drafting techniques and conventions. After completing this course, students will be well prepared for scenic and lighting design courses. *Prerequisite:* THEA 1200.

2160. Stage Makeup. 2. Deals with principles, materials and techniques, concentrating on problems of designing and executing specific makeups for wide range of ages, types and styles. *Prerequisite:* THEA 1100. (Offered fall semester)

2170. Speech for the Actor. 3. Studies speech techniques, including the International Phonetic Alphabet and Standard American Speech for the Stage. Builds upon the FitzmauriceVoicework technique as well as other voice methodologies. *Prerequisites:* THEA 1100 and 1700.

2180. Costume Crafts. 3. Focuses on the area of costume crafts which include but not limited to dyeing, millinery, masks, fabric painting and distressing. *Prerequisite:* THEA 1200.

2200. Backgrounds of Dance. 3. [C3, G1♦CA, G] Surveys ethnic and theatrical dance forms from primal society to 20th century. Examines the place of the arts as a reflection of the culture. (Offered fall semester)

2220. Stagecraft. 3. Introduces students to basic stage production practices and techniques, including safe rigging practices, set construction, scenic painting, stage properties, and stage

lighting. Students are encouraged to participate in “hands-on” demonstrations during classes. (Offered both semesters)

2240. Stage Production. 3. Introduces students to basic Stage Production techniques in numerous areas, including but not limited to costume construction, property design and construction, scenic painting, upholstery, and lighting instrument repair and maintenance. *Prerequisite:* THEA 2220.

2250. Computer Aided Design I. 3. Introduces students to computer drafting techniques for the Theater using AutoCAD. Students learn the basics of two-dimensional drawing using AutoCAD, and also learn basic drawing standards as they apply to the Theater. *Prerequisites:* THEA 1200, THEA 2150.

2340. Musical Theatre Voice Lesson. 1 (Max. 4). Solo instruction in singing techniques and performance styles associated with Musical Theatre. Includes demonstration, brief lecture, discussion, and active participation through singing, analyzing, movement, and performance. *Prerequisites:* none.

2400. Vertical Dance I. 1. An introduction to vertical dance including safety issues, beginning rigging and performance. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructors.

2410. Ballet II/I. 1. Continues studies in classical ballet. *Prerequisite:* THEA 1420.

2420. Ballet II/II. 1. Continues studies in classical ballet. *Prerequisite:* THEA 2410.

2430. Modern Dance II/I. 1. Continues studies in modern dance technique. *Prerequisite:* THEA 1440.

2440. Modern Dance II/II. 1. Continues studies in modern dance technique. *Prerequisite:* THEA 2430.

2450. Tap II. 1. Continues studies in techniques and principles of tap dance. *Prerequisite:* THEA 1450. (Offered spring semester in alternate years)

2480. Jazz II. 1. Continues studies in techniques and principles of jazz dance. *Prerequisite:* THEA 1480. (Offered spring semester)

2800 [3800]. Stage Lighting I. 3. Examines the elemental aspects of stage lighting including equipment, facilities, color, and fundamental electricity. Requires studio work on departmental productions. Intended for majors in the program. *Prerequisite:* THEA 2220. (Normally offered fall semester)

2810. Scenic Painting for the Theatre. 3. Introduces the art of scenic painting by the hands-on use and instruction of a variety of scenic paints, application on select construction materials, the use of unique tools and techniques commonly used to paint scenery for the stage. Safe use and proper handling of such material are addressed. *Prerequisite:* THEA 2220.

2900. Console Programming. 3. Provides basic to advanced training in console programming. Training will be primarily based on the conventional lighting console: ETC Expression3.

Studies automated fixture programming. Students will be expected to be assigned as console operators for various departmental productions, further solidifying their training. *Prerequisite:* acceptance into the BFA Lighting program.

2990. Period Styles in Design for Theatre. 3. Developed to provide an overview of social cultural, art, architecture, music, fashion, literature, and period styles and décor from antiquity to the modern age of western civilization applicable to theatrical stage design. *Prerequisites:* none.

3021. Foundations of Dance Pedagogy. 1. Introduces students to basic theories and practices of dance pedagogy. Lecture and discussion will be balanced with peer teaching and coaching, observation of lessons and integration within a dance classroom situation with some teaching responsibilities and development of a portfolio with lessons and resources for teaching. **Prerequisites:** sophomore standing in the department of Theatre and Dance; successful completion of THEA 3420 or THEA 3440.

3025. Teaching Creative Movement. 1. [C3♦CA] A studio-based pedagogy course that looks at teaching and performing creative movement concepts and skills, and fundamentals of rhythm. Emphasizes content understanding, movement performance, and preparation of lessons. *Prerequisites:* 2.5 GPA, and THEA 3440, or KIN 1000 and 1025.

3100. Kinesiology for Dance. 3. Encompasses seminar in current kinesiology research for dancers. Includes practicum based projects, lectures and supplementary materials. *Prerequisite:* ZOO 2040. (Offered every third semester)

3180. Drama and Religion. 3. [C3♦(none)] Drama and religion seek to communicate ideas about the ultimate meaning of human life. Both influence and are influenced by the culture from which they developed. Examines plays that are influenced by the Bible, Greek plays whose concepts have influenced Christianity over the centuries, and modern plays that address religious issues. Cross listed with RELI 3180. *Prerequisite:* junior standing.

3400. Vertical Dance II. 1 (Max. 2). A continuing course in vertical dance emphasizing the math and physics of the rigging; safety and design, choreography and research in the field. *Prerequisites:* completion of THEA 2400 and consent of instructors.

3410. Classical Ballet III/I. 1 (Max. 2). Continued studies in classical ballet technique. Emphasizes improving technical skills and introducing more advanced steps. Includes research into one discipline of ballet. *Prerequisites:* successful completion of THEA 1420 or its equivalent and consent of instructor.

3420. Classical Ballet III/II. 1 (Max. 2). Continued studies in classical ballet technique. Emphasizes broadening the dancer’s movement vocabulary while refining acquired technical skills. Dancers begin work in study of Baroque dance terms. *Prerequisite:* successful completion of THEA 3410 and consent of instructor.

3430. Modern Dance III/I. 1. (Max. 2). [C3♦(none)] Continued studies in modern dance technique. Presents rhythmic analysis, introduction to pre-classic dance forms and historical survey of modern dance. *Prerequisite:* successful completion of THEA 1440 or its equivalent as deemed by instructor.

3440. Modern Dance III/II. 1. (Max. 2). [C3♦(none)] Continued studies of sequential modern dance technique at intermediate level. Introduces Laban effort/shape theory, compositional forms, improvisation and additional rhythmic analysis. *Prerequisite:* THEA 3430 or its equivalent as deemed by instructor.

3480. Jazz III/I. 1 (Max. 2). An intermediate jazz technique class. Students will learn varying styles of jazz dance, ranging from historical to contemporary, and will perform these for evaluation and incorporate them into class compositions. *Prerequisite:* THEA 2480. (Offered fall semester)

3490. Jazz III/II. 1 (Max. 2). An advanced class in jazz technique and performance. Students will learn varying styles of jazz dance, ranging from historical to contemporary, and will perform these for evaluation as well as incorporate them into class compositions. *Prerequisite:* THEA 3480. (Offered spring semester)

3500. Playwriting/Screenwriting. 3. [C3, W3♦(none)] Introduces writers to the creative process of playwriting (writing for the stage) or screenwriting (writing for the movies). Strongly emphasizes character and story development, as well as practical side of the industry. Students write a play or screenplay. *Prerequisites:* WA and THEA 1000, 1100.

3600. Teaching Theatre in Elementary or Secondary School. 3. Focuses on aspects of age appropriate teaching methods, strategies, and curriculum planning for either elementary or secondary education. Additional emphasis include planning a production season, arts management and budgeting, using national and state content and performance standards, assessing student growth, and developing community advocacy plans. *Prerequisite:* THEA 1100.

3650. Theatre for Young Audiences: Plays and Production. 3. Highlights aspects of performance and directing for child audiences. Students will explore the work of outstanding contemporary playwrights who are writing for young audiences, and develop techniques in writing, acting, and directing for and with young people. *Prerequisite:* THEA 1100.

3720. Stage Movement/Combat I. 2. [C3♦(none)] Encompasses laboratory of basic movement study for the actor. Exposes movement techniques ranging from historical movement through more contemporary theories, such as Alexander Technique and Bartenieff Fundamentals. Provides training in stage combat, including, but not limited to, unarmed and rapier/ dagger combat. *Prerequisite:* THEA 1100. (Normally offered fall semester)

3730. Intermediate Acting. 3. Develops the actor's voice and body for characterization and character interaction through performance of scenes. Study of character and scene analysis. *Prerequisites:* THEA 1100, 2010 and 2020. (Normally offered fall semester)

3740. Acting Styles. 3. Focuses on textual analysis of plays from different periods and styles of dramatic literature. Emphasizes vocal and physical interpretation of character as represented in non-realistic styles of drama. *Prerequisites:* THEA 1100 and 3730. (Normally offered alternating spring semesters)

3750. Acting for the Camera. 3. Addresses performance skills required in acting for the camera. Covers various techniques, styles, and skills necessary to be successful in the professional world of film and television as an actor. Students perform scenes for 3-camera and single camera set-ups, and become familiar with rudimentary technical skills as crewmembers for shoots. Lecture and test material cover career opportunities, union affiliations, and current trends in the film and television industry. *Prerequisites:* THEA 1100 and 3730.

3790. Stage Management. 3. Study of the essential elements of supervising theatrical productions. Stresses the art of organizing auditions, casts, crews, rehearsals, and performances while developing a unique professional relationship with directors, designers and actors. Students will work on a live production. *Prerequisites:* THEA 1100, 1200, 2220.

3805. Stage Lighting II. 3. Analyze proposed productions in terms of period, style, theatre limitations and instrumental inventories. Determine appropriate design solutions in written descriptive analyses that result in 2-D drawings of the design. Produce all supporting paperwork including drafting a plan view, section view, instrument schedules, magic sheets and proposed cue lists. *Prerequisites:* THEA 2220, 2800, 2810 and 2900.

3810. Scene Design. 3. Applies graphic design to scenic design commencing in drop point perspective, designer's elevations and scenic design rendering. Requires practical work on theatre productions. *Prerequisite:* THEA 2150. (Normally offered spring semester)

3820 [4840]. Stage Costuming I. 3. A study of basic drawing and rendering skills, and a selective study of historical silhouettes. Objectives include the ability to trust instinct, application of the basic elements of design, applying historical reference and research to a specific character, developing a concept and finally the application of these principles to a final project. *Prerequisite:* THEA 1100. (Normally offered fall semester)

3840. Historical Costumes from the Skin Out. 3. Learning how to replicate period gowns and undergarments prior to the 1920s by draping and flat-patterning techniques. Includes the research and construction of one complete set of period undergarments and gown either as an individual or in a team to be determined by the

complexity of the garment and the skill level of the students. *Prerequisite:* FCSC 3174 (4170) or FCSC 3175.

3850. Design and Technology Seminar. 2. Introduces designer/technician to process of preparing successful interview material, including a professionally developed portfolio. Exposes designer/technician to business aspects of the theatre world, including resumes, letters of inquiry and application, contracts, unions and professional organizations, internships, apprenticeships, URTAs and professional design/technical training programs. Culminates in junior End-of-the-Year Evaluations. *Prerequisite:* junior standing in the BFA Program with Design/Technical emphasis.

3890. Lighting CAD. 3. Provides basic to advanced training in computerized light plot drafting. Vectorworks is the primary program. Explores SoftPlot 9 and Lightwright. *Prerequisites:* THEA 2220, 2250 and 2800.

3910 [591]. 20th Century Theatre Diversity. 3. [C3♦(none)] Studies plays and production techniques, within the context of historical and sociological events, as developed in the 20th Century that has led to the cultural diversity seen in modern theatre. *Prerequisite:* junior standing. (Normally offered spring semester)

3950. Dialects for the Actor. 3. Introduces the actor to five major dialects for the stage. Examines sensibility, vowel and consonant changes, pitch placement and charting. *Prerequisites:* THEA 1100, 1700, and 2170.

4000. Character Dance. 1. Principles, style and technique of character dance. *Prerequisite:* THEA 3410.

4001. Historical Dance. 1-2 (Max. 2). Historical dance forms in the "Noble Style" dating from the 15th through 18th Centuries. Class work covers the relationship of musical forms to the specific step vocabulary and dances of each period, deportment, period costume as it relates to movement, social environment, period style with an emphasis on reconstruction of 17th and 18th Century dances from Feuillet notation. *Prerequisite:* THEA 3420.

4010. Advanced Ballet. 2-3 (Max. 18). Encompasses progressive technical training and performance style. *Prerequisite:* THEA 3420.

4030. Advanced Modern Dance. 2-3 (Max. 18). Encompasses progressive technical training and performance style in modern dance techniques. *Prerequisite:* THEA 3440.

4060. English/Theatre Studies in _____. 3. Identical to ENGL 4060. (Normally offered spring semester)

4200. 20th Century Dance. 3. [C3, W3♦CA, WC] Intensely studies dance in 20th Century, emphasizing contemporary movement in modern, ballet, jazz and musical theatre dance. Examines social, political and aesthetic trends influencing dance theory and performance. *Prerequisite:* THEA 2200.

4230. Greek Tragedy. 3. Reading and discussion of major plays by Aeschylus, Sophocles, and Euripides, together with examination of the performance and social context of Greek drama, its use of traditional myths, and selected issues in contemporary scholarship on the tragedies. Cross listed with CLAS/ENGL 4230. *Prerequisite:* 3 hours of classics courses. (Offered in spring in alternate years)

4250. Beginning Dance Composition. 2. Presents and criticizes movement studies based on various approaches to composition. Explores experimentation in choreography. *Prerequisite:* THEA 2420, 2440. (Offered fall semester of alternate years)

4260. Intermediate Dance Composition. 2-3 (Max. 3). *Prerequisites:* THEA 4250 and consent of instructor. (Offered spring semester of alternate years)

4500. Advanced Playwriting. 3. An intensive continuation of THEA 3500. Focuses on the creation, analysis and rewriting of play script(s), culminating in a public reading or performance of the script(s). *Prerequisite:* THEA 3500.

4600. Teaching Theatre Artists: Service Learning in the Community. 3. Focus on Service Learning in the Community. Students will have the opportunity to observe various settings in the community of development of theatre program. Some areas of observation and practicum include drama/theatre-in-education, community-issue-focused-theatre, and theatre with special populations, crisis prevention, drama therapy, Preventive Medical Agencies, etc. *Prerequisite:* THEA 1100.

4700. Auditioning and Careers in Dance. 1. Designed for dance majors as a culminating course in preparation for final semester auditions and applications for companies and graduate schools. Through this course, students will set career goals, create an audition portfolio, and gain exposure to the many challenges and opportunities in dance. *Prerequisites:* senior standing, THEA 1021, and one semester of THEA 4010 or 4030.

4710. Advanced Scene Study. 1-3 (Max. 6). Involves intensive work at an advanced level dealing with individual actor's problems through the medium of scene study. *Prerequisite:* THEA 3740. (Normally offered spring semester of alternate years)

4720. Auditioning and Professional Issues. 3. Introduces actors to process of finding, preparing and executing successful audition material, including monologues, songs and dance combinations. Exposes actors to business aspects of the theatre world, including resumes, photos, contracts, unions, internships, apprenticeships, Equity Membership Candidacy programs, URTA's and professional actor training graduate programs. Culminates preparation for final semester auditions for the company/school of choice. *Prerequisites:* THEA 1100, 3730 and 3740. (Normally offered fall semester)

4730. Stage Movement/Combat II. 2. Emphasizes period movement, manners and dance, and armed and unarmed combat. *Prerequisite:* THEA 1100 and 3720. (Normally offered alternating spring semesters)

4750. Computer Aided Design II. 3. Gives design and Technical students advanced training in AutoCAD and Softplot. Also explores methods for effectively transferring files and data between these two programs, and incorporating spreadsheet programs such as Microsoft Excel to improve efficiency. *Prerequisites:* THEA 2250, THEA 2800.

4770. Summer Theatre. 1-3 (Max. 6). Offers credit for participation in the Wyoming Summer Theatre program in all phases of production. Offered for S/U only. *Prerequisites:* 12 hours in theatre and consent of instructor. (Offered summer session)

4800. Stage Lighting-Production. 3. Explores design and execution of lighting for theatrical production. Includes practical laboratory work with Theatre & Dance productions. *Prerequisite:* THEA 2800, 2900, and 3805. (Normally offered alternating spring semesters)

4810. Advanced Scenic Design. 3. Explores alternate styles of scenic design in the realization of a design for a complete stage setting. Emphasis in course work will be on creating the portfolio. *Prerequisite:* THEA 3810. (Offered alternating spring semesters)

4820. Directing I. 3. Tools course. Focuses on basic pictorial and blocking skills of the director. Includes in-class exercises that cover structural and character analysis of play scripts, blocking annotation and prompt scripts, developing ground plans, creating compositions with emphasis, focus and balance, and employing movement as a dynamic tool. Requires two outside directing projects with verbal evaluations of all project work. *Prerequisites:* THEA 2010, 2020, 3730, and 3810. (Normally offered fall semester)

4830. Directing II. 3. Focuses on creative process of developing directorial concepts, establishing the world and style of the play, working with the actor, and functioning as a designer. Includes exercises that analyze different directorial approaches, as well as the audition and casting process. Culminates one-act mounted production performed before invited audience. *Prerequisites:* THEA 4820 and written permission of instructor. (Normally offered alternating spring semesters)

4845. Costume Fit and Alteration. 3. Focuses on fitting modern clothing and historical costumes to individuals. Students learn how to identify fit issues in a fitting, make the proper corrections and fit the garment again. Students use a combination of previously constructed garments and also pattern garments to fit. *Prerequisite:* FCSC 3174 (4170) or FCSC 3175.

4850. Stage Costuming II. 3. Explores costume design, emphasizing various rendering techniques. Emphasis is placed on the portfolio. *Prerequisite:* THEA 3820. (Normally offered spring semester)

4880. Advanced Theatre Practice. 1-2 (Max. 4). Encompasses individual problems in theatre or interpretation. Includes research, writing and practical work. *Prerequisites:* 12 hours in theatre and consent of instructor. (Offered both semesters)

4930. Theatre History I. 3. [C1, W3↔WC] First semester of a one-year series. Surveys theatrical and dramatic practices from origins of Western European theatre to the theatre of the avant-garde. Specifically focuses on the climate of ideas and theoreticians, theatrical practitioners and audiences. *Prerequisites:* THEA 2010, 2020, 6 hours in theatre at 3000-level. (Normally offered alternating fall semesters)

4940. Theatre History II. 3. [C1, W3↔(none)] Second semester of a one-year series. Continues THEA 4930. *Prerequisite:* THEA 4930. (Normally offered alternating spring semesters)

4950. Senior Thesis. 3. Encompasses senior research project under faculty member guidance and supervision. *Prerequisite:* senior standing.

4990. Research in Theatre. 1-3 (Max. 6). *Prerequisite:* 6 hours in area of research and consent of instructor.

Women's Studies

100 Ross Hall, 766-2733

FAX: (307) 766-2555

Web site: www.uwyo.edu/wmst

Director: Marianne Kamp

Professors:

CATHERINE CONNOLLY, B.S. State University College at Buffalo 1984; M.A. State University of New York at Buffalo 1989; J.D. 1991; Ph.D. 1992; Professor of Sociology 2004, 1998, 1992.

COLLEEN DENNEY, B.A. Louisiana State University 1981; M.A. 1983; Ph.D. University of Minnesota 1990; Professor of Art 2005, 1990; Professor of Women's Studies 2009.

SUSAN R. MCKAY, B.S. De Pauw University 1964; M.S. University of Colorado 1965; Ph.D. University of Wyoming 1978; Professor of Nursing 1990, 1986; Professor of Women's Studies 1993.

Associate Professor:

BONNIE ZARE, B.A. Stanford University 1988; M.A. University of Wisconsin 1989; Ph.D. Tufts University 1994; Assistant Lecturer in English 1997; Associate Professor in Women's Studies 2006, 2002.

Assistant Professor:

Danielle Pafunda, B.A. Bard College 1999; M.F.A. New School University 2002; Ph.D. University of Georgia 2008. Assistant Professor of Women's Studies, 2008.

Adjunct Faculty:

(see department section following name for academic credentials)

Stephanie Anderson, political science

Judith A. Antell, American

Indian studies

Susan C. Frye, English
Teena Gabrielson, political science
Kendra Gage, history
Susanna L. Goodin, philosophy
Anne Guzzo, music
Emily Hind, modern and classical languages
Jeanne Holland, English
Katherine Inman, women's studies
Angela Jaime, educational studies
Michelle Jarman, WIND
Marianne R. Kamp, history
Diane Kempson, social work
Frieda E. Knobloch, American studies
Gracie Lawson-Borders, African American studies
Kari Morgan, family and consumer sciences
Hannelore Mundt, German
Quincy Newell, religious studies
Tracey Owens Patton, Communication and Journalism
Mary Sheridan-Rabideau, English
Margaret Zamudio, sociology

Advisory Committee:

Stephanie Anderson (political science)
 Deb Beck (education)
 Teena Gabrielson (political science)
 Kendra Gage (history)
 Susanna Goodin (philosophy)
 Emily Hind (modern and classical languages)
 Angela Jaime (educational studies)
 Michelle Jarman (WIND)
 Marianne Kamp (history)
 Diane Kempson (social work)
 Gracie Lawson-Borders (African American studies)
 Barbara Ellen Logan (women's studies)
 Jennifer Mayer (libraries)
 Quincy Newell (religious studies)
 Kari Morgan (family and consumer sciences)
 Tracey Owens Patton (communication and journalism)
 Mary Sheridan-Rabideau (English)
 Mary Ann Stout (Women's Center Director)

Professor Emeritus:

Katherine Jensen

The Women's Studies Program offers an interdisciplinary course of study which systematically examines the experiences of women in history, society and culture. Students may earn a major in women's studies or a minor as a complement to their major.

An interdisciplinary Women's Studies Committee supervises the program, including course introduction, scheduling and coordination. A faculty adviser is assigned to the student upon declaration of the major or minor.

For the women's studies major, the student must complete 33 credit hours of women's studies courses including:

WMST 1080 Intro to Women's Studies
 WMST 3500 Gender and Society
 WMST 3710 Gender and the Humanities
 WMST 4700 Feminist Theory
 WMST 4965 Senior Paper or
 WMST 4970 Internship

All required classes for the major must be completed with a grade of 'C' or better.

For the women's studies minor, students must complete WMST 1080, 3500, 3710 and 4700, 6 credits of women's studies electives. A minimum of 12 hours of credit in the minor must be exclusive of hours earned in the student's major.

Women's Studies (WMST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1020. Intellectual Community: Women in Sports. 3. [(none)↔I, L] An overview of the role of American women in sports. Studies concepts about women, sports, and society in contemporary and historical perspectives. Topics include: history of women in sports, physiological, social and cultural considerations, media image, and careers. Cross listed with HLSC 1020. *Prerequisites:* none.

1030. Social Justice in the 21st Century. 3. [(none)↔I, D] Appropriate for students interested in diversity and social justice. Topics covered through an interdisciplinary study of people and society range from identity, critical thinking, empowerment, role models, stereotyping, institutional discrimination, and tolerance. The key lynchpin is active participation in the development and maintenance of just communities. Cross listed with CHST/AAS/AAMST/AIST 1030. Enrollment preference will be given to We The People FIG students.

1080. Introduction to Women's Studies. 3. [C1↔CH, D] Introduction to key issues in women's studies. Topical examination of women's participation in, and relationship to, institutions of society, such as family and school, as well as processes and activities, such as work, art, literature and politics in historical and cross-cultural analysis. Cross listed with ENGL 1080.

1090. Women in Contemporary Society. 1. [(none)↔I] Exposes students to the major questions in Women's Studies. Examines women's participation in, and relationship to, institutions and society, such as family and school, as well as activities such as work, art, literature and politics in historical analysis.

1900 [4510]. Women and Leadership. 3. [C2↔O, L] Students examine theoretical, historical and cultural aspects of leadership, values in leadership, gender differences in leadership styles, and practical applications of leadership skills through oral communication and information literacy. Individual and collaborative work is expected. Cross listed with SOWK 1900.

2000. Introduction to LGBTQ/NS Studies. 2. [(none)↔C, D] Lesbian, Gay, Bisexual, Transgender, Queer and New Sexuality Studies (LGBTQ/NS) explores the interdisciplinary study of sexuality and its importance to the organization of social relations and social institutions. Primary among its concerns is the study of the lives, the politics, and the creative work of sexual minorities. *Prerequisites:* none.

2001. Gender and Ethnicity in Science. 3. [(none)↔C, D] Covers factors affecting the performance and retention of women and ethnic minority students in science careers, and science as a social construct. Cross listed with CHST 2001.

2060. Topics in Women's Studies. 1-4 (Max. 6). Popular and current topics in women's studies.

2070. Gender and Religion. 3. Aims to help students understand how religion constructs and reinforces gender roles in religion and society. Looks at traditional gender roles in Christianity and the transformation they have undergone in the past century or so. Cross listed with RELI 2070.

2135. Women and Aging. 3. [C2↔(none)] Focuses on women and the aging process with emphasis given to both the problems and promises of aging. Topics to be explored within a multicultural, sociological framework include the definition of self, relationships, community, health and health care, work and service, retirement, economic realities and new perspectives on aging. Cross listed with FCSC/SOC/NURS 2135. *Prerequisite:* ENGL/SOC/WMST 1080 or SOC 1000 or FCSC/NURS/SOC 2120.

2420 [2500]. Women and Politics. 3. [C2↔(none)] Describes and compares status and political activity of women in America with those of women in other societies in order to explore causes, methods and results of political involvement by women. Cross listed with POLS 2420. *Prerequisite:* POLS 1000.

2700. Women with Disabilities. 3. [(none)↔D] Provides an introductory examination of the interplay between issues, challenges, and strengths of the experience of women with disabilities. Current research and theories from disabilities studies and women's studies will serve as lenses for this examination of disability as a social construct. Cross listed with WIND 2700. *Prerequisites:* none.

3000. Cultures of Nature in the United States. 3. [C1, W2↔(none)] Uses artistic, philosophical, historical and literary material to investigate how ideas about and representations of nature have changed over time in the U.S. Culminates in an examination of a wide range of contemporary environmental ideas within this broad historical and cultural context. *Prerequisite:* 2000-level course in one of the following departments: American studies, American history, American literature, or a 2000-level course approved for the ENR program. Cross listed with AMST 3000.

3150. Feminist Christian Thought. 3. [C1↔(none)] In recent decades Christianity has undergone important changes with regard to the place of women in the church. Addresses historical and theological discussions that have accompanied those changes. Also addresses how feminism and religion affect one's belief system. Cross listed with RELI 3150. *Prerequisites:* junior standing and at least one course in women's studies and one course in religious studies.

3200. Perspectives in Chicana Studies 3. An interdisciplinary introduction to the study of the history, culture, gender relations, and contemporary political, economic status of Chicanas/Mexican American women. Examines the origins, development of Chicana studies as a major emphasis in Chicano/Chicana studies. Cross listed with CHST 3200. *Prerequisite:* CHST 1100.

3300. Gender Development. 3. Examines the development of gender roles and sex differences. Incorporates developmental, clinical and social psychological perspectives. Includes examination of biological, social and cultural factors on gender development; conceptualizations of masculinity, femininity and androgyny; differences in play behavior in boys and girls; evaluation of psychological measurement and research regarding gender development and sex differences. Cross listed with PSYC 3300. *Prerequisite:* PSYC 2300 or 4300.

3500. Gender and Society. 3. [W2, C2↔WB] Examines the social construction of gender using interdisciplinary methods of analysis. Generally students will find that the readings and assignments emphasize the importance of denaturalizing the gender stereotypes and norms that impact women's and men's lives. Intersections between gender, race, class, age, and sexual orientation are examined within the context of both American and global cultures. Cross listed with POLS 3500. *Prerequisite:* WMST 1080 or cross listed equivalent. (Normally offered once a year)

3610. Non-Western Women Writers. 3. [C1, G1↔(none)] Examines literature written by women in non-western cultures. The geographical region, time period, and genres of literature may vary by semester. Analyzes representations of such topics as family, marriage, sexuality, community, and colonialism as expressed in fiction, drama, literary non-fiction, and/or poetry. *Prerequisites:* ENGL 1010 or WMST 1080; junior standing.

3650. Contemporary US Immigrant Women Writers. 3. [(none)↔CH, D] A study of contemporary American literature (fiction, autobiography, and poetry) by Mexican, Caribbean (Haitian and Dominican) and Arab immigrant women and daughters of immigrant parents. Film, other visual arts, and a range of essays enrich students' analysis of the literary texts. *Prerequisite:* WMST 1080, or WA, or junior standing.

3710. Gender and Humanities. 3. [C1↔CH] Explores how men and women are imaged differently, studying the influence of representation on gender (including representations in literature, film, art, popular culture, and/or performance). Sharpens students' ability to analyze texts and images and investigate those texts' messages about gender, sexuality, ethnicity and class. Cross listed with ENGL/ART/HIST 3710. *Prerequisite:* WMST 1080 or ENGL 1010. (Offered once a year)

3800. Chicanas/os in Contemporary Society. 3. [(none)↔CS, D] Focuses on three major movements within the Chicana/o community; labor, nationalism, and feminism. Students will assess these three movements to determine what role they have played in transforming the social conditions and political identity of the Chicana/o and Latina/o population in the US. Cross listed with CHST/SOC 3800. *Prerequisite:* CHST 1100 or SOC 1000 or WMST 1080.

4155 [4920, 4950]. Women, War and Health. 3. [C2, G1↔CS, G] Focuses on the physical and psychological health of women and children as influenced by armed conflict. Examines the psychosocial, public health, and socioeconomic effects of living in contemporary war zones or conditions of threatened war. Key international documents that address effects upon women and children are discussed in order to evaluate feminist initiatives to prevent and mediate the consequences of war. Dual listed with WMST 5155; cross listed with INST/NURS 4155. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)

4175 [4940]. Gender, Women, and Health. 3. [G1, C2↔CS, G] Focuses on issues of gender, women and health, including the effects of gender bias in medical research and health care practices and policies. Health care issues of specific concern to women, both nationally and internationally will be examined. Cross listed with INST/NURS 4175. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year)

4190. Women and the Bible. 3. Explores depictions, roles and statuses of women found in the Bible, both Old and New Testaments. Introduces ways biblical portraits of women have been used in more recent centuries to develop theologies of, by, and for women. Cross listed with RELI 4190. *Prerequisite:* junior standing.

4300. The Politics of Sexuality. 3. [C1↔(none)] Addresses issue of how sexuality has become gendered with different meanings for both males and females as to reproductive behavior, especially how women's bodies are defined in sexual terms. *Prerequisite:* WMST 1080, 3500 or 3710. (Offered every other year)

4330. European Gender and Women's History. 3. [C2↔(none)] The experiences of women and the history of gender from the Renaissance through the 19th century. Focuses on the changing notions of the masculine and the feminine through such historical episodes as the Reformation, the Enlightenment, the French Revolution and the Industrial Revolution. *Prerequisite:* HIST 1110 or 2110.

4335. Women and Islam. 3. Examines women's lives in Islamic societies from the seventh century to the present in the Middle East and throughout the world. Themes include women's position in Islamic law, society and culture, Western images of Muslim women, veiling and Islamist movements, theoretical readings on power, gender and agency. Cross listed with HIST 4335, dual listed with WMST 5335. *Prerequisite:* 6 hours in women's studies, international studies, religious studies, or history.

4360. American Indian Women. 3. Explores the lives of American Indian women in a variety of contexts through time. The complexity and diversity of Indian women's experiences throughout history are emphasized. Much of the class concerns Indian women's lives within the reality of European American colonization and its consequences for Indian peoples. Cross listed with AIST/SOC 4360. *Prerequisite:* 6 hours of 2000-level AIST classes.

4400. Women and Work. 3. [W3, C2↔(none)] Surveys general patterns of women's paid and unpaid work in the U.S. and abroad. Offers reconceptualizations of the meaning of work in women's lives, as well as debates surrounding comparable worth, pay equity, women's work experience and women in the world economy. Cross listed with SOC 4400, dual listed with WMST 5400. *Prerequisite:* 6 hours of women's studies or sociology. (Offered once a year)

4450. Ecofeminism. 3. Focus is on issues of gender, women and ecology. Ecofeminist thinkers argue that there is no liberation for women and no solution to the ecological crisis without a fundamental shift in relationships of domination. Uniting the two movements results in a radical reshaping of modern socioeconomic relations. Dual listed with WMST 5450. *Prerequisite:* 6 hours in WMST, PHIL, and/or ENR.

4500. Special Topics in Women's Studies. 1-4 (Max. 12). Presents current research issues by visiting and regular faculty. *Prerequisite:* WMST 1080, 3500, 3710.

4540. Women, Crime and the Law. 3. [W3, C2♦(none)] Addresses status of women as offenders and as victims in society and in the criminal justice system. Considers special role of women as professionals in the criminal justice system. Cross listed with CRMJ/SOC 4540. *Prerequisite:* WMST/ SOC 1080, 3500 or SOC 2400. (Offered every other year)

4580. Women and Third World Development. 3. [C2, G1♦(none)] Women's contributions to development of third world countries and the effects of development projects on women, their work and their families are examined in this course. Dual listed with WMST 5580; cross listed with SOC 4580. *Prerequisite:* WMST 1080 or 3500. (Offered once a year)

4590. Women of India. 3. [(none)♦G] Introduces students to concepts that influence the daily lives of contemporary women from India. Organized around two themes: how women have made history in India, and how today's women are performing, confronting and modifying cultural traditions. *Prerequisites:* WA and a CS or CH course.

4700. Feminist Theories. 3. [C1, W3♦WC] Surveys contemporary feminist theories and places those theories within the framework of social, literary, and artistic criticism. Uses feminist theories to address questions such as nature of meaning in literature and artistic forms; construction of science; and identity of the individual as these phenomena are affected by gender construction. Dual Listed with WMST 5700. *Prerequisite:* 12 hours of women's studies. (Offered once a year)

4770. Gender and Film. 3. [C1♦(none)] Investigates gender construction in mainstream, mainly contemporary Hollywood cinema. Readings of germinal essays in film theory and extensive viewing of films will provide the critical tools to understand how and why stereotypical images are presented, how and why the spectator is manipulated to identify with these images. Dual listed with WMST 5770. *Prerequisite:* WMST 1080, 3500 or 3710. (Offered once a year)

4775. Language and Gender. 3. Investigates the relationship between language use, linguistic categories, and gender categories. Examines the linguistic practices involved in the formulation, discussion, and performance of gender categories in a number of different cultures. *Prerequisite:* ANTH 1200, 2000. Cross listed with ANTH 4775.

4780. History of Women Artists. 3. [C3♦(none)] A study of the documented influence of women artists from medieval to modern times. Cross listed with ART 4780. *Prerequisites:* ART 1010, 2700, 2720.

4830. Victorian Women's Lives: Their Art, Literature and Culture. 3. [C1♦CA] An interdisciplinary approach to the study of women's issues in art, using literary, cultural and sociological texts to enlarge the art historical basis. Topics include "domestic goddess," class issues, racial questions, working women, prostitution,

education, marriage and divorce. Cross listed with ART/ENGL 4830, dual listed with WMST 5830. *Prerequisite:* Either ART 2020 or WMST/ENGL 1080. (Offered every other year)

4960. Women's Bodies, Women's Minds. 3. [C2♦CS] Explores women's physiologic and psychologic development and the influences of patriarchal society upon the interpretation of what constitutes normalcy across the female life cycle. Historical, cultural and contemporary attitudes of the health care system and women's perspectives on menstruation, childbearing, breastfeeding and menopause will be analyzed. Cross listed with NURS 4960. *Prerequisite:* upper division status. (Offered every other year)

4965 [4980]. Senior Paper. 3. The student, in consultation with the director of women's studies and a faculty supervisor, will identify a topic of research interest and produce a research paper of 30-40 pages in length. The paper should show evidence of original thought, familiarity with published work, and solid research skills. *Prerequisite:* WMST 4700.

4970 [4000]. Internship. 3. Students gain practical experience in the application of principles learned in women's studies courses. Students will work with the director of women's studies internships to select a site; will intern approximately ten hours per week in the host organization; and will complete written assignments which reflect the student's work. Offered S/U only. *Prerequisites:* 12 semester hours of women's studies course work, including WMST 1080 and 3500 or 3710 and consent of instructor.

4975 [4970]. Independent Studies. 1-4. Offers the advanced student the opportunity to pursue a topic of interest with the assistance and direction of an instructor in women's studies. *Prerequisite:* 6 hours in women's studies.

Zoology and Physiology

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766-4207

FAX: (307) 766-5625

Web site: www.uwyo.edu/Zoology

Department Head: Frank J. Rahel

Professors:

CRAIG W. BENKMAN, B.A. University of California at Berkeley 1978; M.S. Northern Arizona State University 1981; Ph.D. State University of New York 1985; Robert Berry Professor of Ecology, Professor of Zoology and Physiology 2004.

HAROLD L. BERGMAN, B.A. Eastern Michigan University 1968; M.S. 1971; Ph.D. Michigan State University 1973; Director SENR/IENR 1997; Professor of Zoology and Physiology 1984, 1975.

STEVEN W. BUSKIRK, B.S. University of Redlands 1969; M.S. University of Arizona 1972; Ph.D. University of Alaska 1983; Professor of Zoology and Physiology 1997, 1984.

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HENRY J. HARLOW, B.A. California State University 1966; M.A. 1973; Ph.D. University of Wyoming 1979; Director UW-NPS 1992; Professor of Zoology and Physiology 1996, 1981.

WAYNE A. HUBERT, B.S. Illinois State University 1969; M.S. Southern Illinois University 1972; Ph.D. Virginia Polytechnic Institute 1979; Assistant Leader, Wyoming Cooperative Research Unit 1982; Professor of Zoology and Physiology 1991, 1982.

JAMES R. LOVVORN, B.S. University of Georgia 1977; M.S. Purdue University 1980; Ph.D. University of Wisconsin 1987; Professor of Zoology and Physiology 2002, 1989.

CARLOS MARTINEZ del RIO, B.Sc. Universidad Nacional de Mexico 1984; Ph.D. University of Florida 1990; Professor of Zoology and Physiology 2004, 2000.

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FRANK J. RAHEL, B.A. Kenyon College (Ohio) 1974; M.S. University of Wisconsin 1977; Ph.D. 1982; Professor of Zoology and Physiology 1998, 1991.

Associate Professors:

MERAV BEN-DAVID, B.S. Tel Aviv University 1984; M.S. 1988; Ph.D. University of Alaska 1996; Associate Professor of Zoology and Physiology 2004, 2000.

BRUCE W. CULVER, B.S. University of Wyoming 1969; Ph.D. University of Kansas Medical Center 1975; Associate Professor of Pharmacy 1981, 1977, Zoology and Physiology 1984.

ROBERT O. HALL JR., B.S. Cornell University 1989; Ph.D. University of Georgia 1996; Associate Professor of Zoology and Physiology 1998.

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Assistant Professors:

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QIAN-QUAN SUN, B.Sc. Shandong Normal University 1990; M.S. 1993; Ph.D. St. Andrews University 1998; Assistant Professor of Zoology and Physiology 2004.

Assistant Academic Professional

Lecturers:

MARGARET J. FLANIGAN, B.Sc. University of Strathclyde 1984; Ph.D. University of the Witwatersrand 1993; Academic Professional, Zoology and Physiology 2006, 2003.

Senior Academic Professional:

Research Scientist

ZHAOJIE ZHANG, B.S. Shandong University 1985; M.S. 1988; Ph.D. University of Oklahoma 1999; Director, Microscopy Core Facility, University of Wyoming 2001; Associate Academic Professional/Research Scientist in Zoology and Physiology 2007, 2004.

Assistant Academic Professional

Research Scientist:

ANNA D. CHALFOUN, B.A. Smith College 1995; M.S. University of Missouri-Columbia 2000; Ph.D. University of Montana-Missoula 2006; Assistant Research Scientist, Zoology and Physiology 2008.

AMY C. KRIST, B.A. S.U.N.Y. Potsdam 1991; Ph.D. Indiana University 1998; Research Scientist, Zoology and Physiology 2004.

Temporary Academic Professionals:

DIANE GORSKI, B.S. University of Wyoming 1989; M.S. 1991; Lecturer, Zoology and Physiology 1996.

BETH RINTZ, B.S. Pennsylvania State University 1995; M.S. University of Wyoming 2005; Lecturer, Zoology and Physiology 2006.

Professors Emeritus:

Robert W. Atherton, Robert P. George, Robert M. Kitchin, J.A. Lillegraven, Frederick G. Lindzey, James D. Rose, Joan Smith-Sonneborn

Academic Professional Lecturer

Ameritus:

Jane Beiswenger

Wyoming Cooperative Fish and Wildlife Research Unit

Leader: Hubert

Assistant Leader: Kauffman

Assistant APRS: Chalfoun

The Department of Zoology and Physiology offers a variety of courses in the biological sciences that encompass many aspects of animal form, function, and biology.

Students are able to study disciplines ranging from the intricacies of cell biology to the complexities of ecosystem functioning. Genetics, cell biology and physiology, histology and developmental biology, human, animal, environmental, and comparative physiology, organismal biology (invertebrates, fish, amphibia, reptiles, birds, mammals), terrestrial, aquatic, and community ecology, and wildlife and fisheries management can be studied.

Undergraduate Degrees

Biology Major

The Biology major is an interdepartmental program that provides a broad education in biological sciences. It enables students to combine courses in biology, botany, zoology, physiology, and other biological sciences to meet the requirements of the major. On completion of the core requirements for the major, specific courses selected to complete the major may vary according to students' interests and are worked out by consultations between student and adviser. The requirements for a bachelor's degree are outlined in the Biology section of this *Bulletin* or see the web site at www.uwyo.edu/biology.

Physiology Major

Physiology is the study of how animals work: how they breathe, feed, interact with their environment, and carry out many other activities and functions. Physiology is the knowledge that the health sciences are built on and so is especially important for students who may be thinking of becoming medical practitioners, veterinarians or health professionals. In addition to the University and College of Arts and Sciences requirements, a degree in physiology typically involves the following courses:

Freshman Year

Students take introductory courses in biology, chemistry, physics, and mathematics as these are essential for understanding physiological processes.

Sophomore Year

Students finish any introductory courses they have not yet completed and take basic courses in Human Systems Physiology, Integrative Physiology, and Anatomy. Systems Physiology is concerned with how the cardiovascular and respiratory systems function. Integrative Physiology is concerned with how the body regulates such functions as reproduction or blood glucose concentrations.

Junior and Senior Years

Having completed these basic and introductory courses, students can specialize in an area of physiology they find particularly interesting. The department has strong expertise in neuroscience physiology, cell physiology, ecological, and comparative physiology. For details, visit our web site.

At the end of this program students will have a thorough knowledge of physiology, will be well prepared to enter health sciences or graduate education, and will have a range of skills attractive to employers.

Wildlife and Fisheries Biology and Management Major

Wildlife and Fisheries Biology and Management is a professional degree designed to prepare students for state, federal, and other positions in resource management and conservation biology. The degree provides students with knowledge of the natural world, understanding of processes governing dynamics of wildlife and fish populations, as well as an appreciation of human-mediated effects on wildlife and fish populations. A student graduating with this degree will be familiar with the theory of resource management as well as with methods used to determine population status, habitat quality, and conservation. In Wyoming the abundance of wild animals and pristine habitats provide a unique natural laboratory for studying the responses of wildlife and fish populations to changing climates and habitats.

In addition to the University and College of Arts and Sciences requirements, a degree in wildlife and fisheries biology and management typically involves the following:

Freshman Year

Students take introductory courses in biology, chemistry, physics, and mathematics as these provide essential tools for understanding ideas and processes in wildlife and fisheries biology and management.

Sophomore Year

Students finish any introductory courses they have not yet completed and begin the study of wildlife and fisheries biology and management by taking courses in resource management, natural history of vertebrates, physiology, genetics, and evolution, as these subjects provide the underlying principles of population dynamics and the mechanisms of evolution.

Junior and Senior Years

Students can elect to concentrate in those areas of wildlife and fisheries biology and management they find most interesting and can specialize in a terrestrial or aquatic option. For details, see our web site.

A student graduating with a degree in WFBM will have a comprehensive knowledge of wildlife and fisheries biology and management, will have earned a degree that is compatible with the requirements for professional certification with the American Fisheries Society or the Wildlife Society, and will have a range of knowledge and skills that are valuable to potential employers.

Zoology Major

Zoology is the study of animals: their structure, physiology, development and evolution, and life cycles. One of the enduring fascinations of zoology is that we can learn so much about ourselves and our environment by studying what our fellow creatures do.

In addition to the University and College of Arts and Sciences requirements, a degree in zoology typically involves the following courses:

Freshman Year

Students take introductory courses in biology, chemistry, physics, and mathematics as these provide essential tools for understanding zoological ideas and processes.

Sophomore Year

Students finish any introductory courses they have not completed and begin the study of zoology by taking courses in anatomy, physiology, genetics, ecology, and evolution, as these subjects provide the underlying principles of the mechanisms of evolution, and animal structure, function, and ecology.

Junior and Senior Years

Students take courses in the five main animal kingdoms: Invertebrate Zoology, Ichthyology, Herpetology, Ornithology, and Mammalogy. For details of these and other courses see our web site.

At the end of this program students will have a comprehensive knowledge of zoology, will be well prepared for graduate education, and will be well equipped to enter any of the many employment opportunities that are available.

Learning Outcomes for Undergraduates

The learning outcomes that direct the teaching of the department's degrees and which we expect our graduates to have acquired are:

- Competence in basic sciences;
- Competence in the content of the specific courses that constitute the principal knowledge of the degree; and ability to
- Comprehend, analyze, and interpret biological data where appropriate; and
- Synthesize information from the biological literature, and communicate it effectively in writing or orally.

Undergraduate Minor

Minors in zoology, physiology, and wildlife fisheries biology management are offered. Contact the department for further information or see the web site www.uwyo.edu/zoology.

Graduate Degrees

The department offers programs leading to Plan A or B Master of Science degrees and offers a Ph.D. degree. Refer to the *Graduate Bulletin* for details.

Zoology (ZOO)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2040. Human Anatomy. 3. [S1↔SB] Study of human structure in terms of its microscopic and gross anatomy. Provides students with adequate background to study human physiological function. The corresponding course, to be taken concurrently, is ZOO/KIN 2041. Cross listed with KIN 2040. *Prerequisite:* LIFE 1010.

2041. Human Anatomy Laboratory. 1. [S1↔SB] A laboratory study of human structure in terms of human microscopic and gross anatomy. This laboratory course is designed to provide students with an adequate background to study human physiology and kinesiological function. *Prerequisite:* KIN/ZOO 2040 or concurrent enrollment.

2450. Principles of Fish and Wildlife Management. 3. Emphasizes principles of habitat and population biology and management, human dimensions of wildlife management, as well as law and policy. *Prerequisites:* LIFE 1010 and 2022. (Normally offered spring semester)

3010. Vertebrate Anatomy, Embryology, and Histology. 4. Provides a comprehensive overview of vertebrate anatomy. The structural organization, embryological derivation, and histological organization of the major organ systems will be emphasized. The evolution and functional organization of anatomical structure will also be emphasized. Includes laboratory sessions. Fulfills degree requirement in physiology subsection for zoology major. *Prerequisites:* LIFE 2022 or equivalent, and a semester of chemistry.

3021. Physiology of Exercise. 4. [M3↔(none)] Applies physiological principles to human physical activities, emphasizing interaction of neuromuscular, circulatory and respiratory mechanisms as affecting and affected by immediate exercise situation and physical training. Includes laboratory. Cross listed with KIN 3021. *Prerequisites:* ZOO 2040 and 2041.

3115. Human Systems Physiology. 4. Covers the fundamental function(s) of the human body systems, from cells and tissues through organs and systems, focusing also on biological communication and homeostasis. Students learn how to interpret physiological data. Includes laboratory and tutorial sessions. Fulfills degree requirement

in physiology subsection for zoology major. Cross listed with KIN 3115. *Prerequisites:* grade of C or above in LIFE 1010; CHEM 1020 (preferred) or CHEM 1000; sophomore standing.

3600. Principles of Animal Behavior. 3. Intensively introduces scientific study of animal behavior. Utilizes evolutionary, ecological and physiological approach. *Prerequisite:* introductory course in zoology, biology or psychology. (Normally offered spring semester)

4100. Writing in Biological Sciences. 3. [W3↔WC, L] Writing intensive course, for zoology and physiology, biology and botany majors. Teaches students to write in the format of biological disciplines. Students must be concurrently enrolled in an upper-division 3-4 hours ZOO, BOT or BIOL course or have successfully completed such a class. Cross listed with BOT 4100. *Prerequisites:* WA, WB and prior or concurrent registration for an upper division ZOO, BOT, BIOL course.

4110. HIV/AIDS: The Disease and the Dilemma. 3. Explores the basic biology of the HIV virus, and its effects upon the human body, the magnitude of the global HIV/AIDS pandemic, treatment and prevention of AIDS, and the social, political, economic, and legal issues of HIV/AIDS. *Prerequisite:* LIFE 1003 or LIFE 1010.

4125 [3120]. Human Integrative Physiology. 4. Examines how functional organ systems are coordinated and integrated to establish and maintain health. It considers, among others, the functions of the endocrine and central nervous systems. Dual listed with ZOO 5125. *Prerequisites:* grade of C or higher in ZOO 3115; and/or a Pharmacy 1 standing.

4140. Histology. 4. Studies microscopic structure of principal types of mammalian tissues. Correlates structure and function. Most laboratory preparations are from human tissues. Dual listed with ZOO 5140. *Prerequisite:* LIFE 2022. (Normally offered spring semester)

4190 [4230]. Comparative Environmental Physiology. 4. Studies and interprets principles of physiology which adapt animals to various environmental constraints. Introduces discipline which has risen between traditional fields of physiology and ecology and provides understanding of animal distribution and survival. Fulfills degree requirements in physiology subsection for the zoology major. Dual listed with ZOO 5190. *Prerequisites:* LIFE 2022 and one year of chemistry. (Normally offered spring semester)

4280. Introduction to Neuroscience. 3. Examines the basic electrical properties of neurons and from there identifies determinants of brain development, how neuronal "circuits" are formed and how these neuronal systems enable the processing of sensory information, coordinated movement, adaptation to the environment, and other complex functions (e.g. sleep, sex). Dual listed with ZOO 5280. *Prerequisite:* ZOO 3115 or equivalent.

4290. Neural Mechanisms Underlying Animal Behavior. 3. Studies ways in which nervous systems of both invertebrates and vertebrates contribute to and control their behavioral repertoires. Focuses on aspects of sensory physiology with brief orientation to structure and function of nervous systems. Presents analysis neural control of movement. Includes laboratory demonstrations. *Prerequisite:* introductory course in zoology, biology or psychology.

4300 [4720]. Wildlife Ecology and Management. 5. Integrates concepts of vertebrate ecology with the art of wildlife management, stressing approaches to deal with the inherent uncertainty of managing populations. Strategies to increase or decrease populations of target species, tools used to determine population status (e.g., viability analysis, monitoring, habitat assessment), and ecosystem management approaches. Laboratory included. Dual listed with ZOO 5300. *Prerequisite:* LIFE 3400. (Offered fall semester)

4310 [4730]. Fisheries Management. 3. Acquaints students with theory and techniques of inland fisheries management. Includes methods of evaluating growth and production, rates of mortality and recruitment and use of yield models in fisheries biology. Includes laboratory and field exercises. Dual listed with ZOO 5310. *Prerequisite:* ZOO 4330. (Normally offered fall semester)

4330 [4750]. Ichthyology. 3. Anatomy, physiology and classification of fishes, emphasizing classification and identification of Wyoming fishes. Includes laboratory. Dual listed with ZOO 5330. *Prerequisite:* LIFE 2022. (Normally offered spring semester)

4340. Developmental Biology and Embryology. 4. Introduces study of vertebrate embryology and cellular differentiation. Includes gametogenesis, fertilization, blastulation and organogenesis, growth and differentiation, teratology, metamorphosis, regeneration and asexual reproduction. Emphasizes mechanisms that create form and regulate cellular differentiation. Dual listed with ZOO 5340. *Prerequisite:* one year of life sciences, one year of chemistry. (Normally offered spring semester)

4350 [4780]. Ornithology. 3. Acquaints students with classification, identification, morphology, distribution, natural history and ecology of the birds of North America. Includes laboratory. Dual listed with ZOO 5350. *Prerequisite:* LIFE 2022. (Normally offered spring semester)

4370 [4790]. Mammalogy. 3. Studies mammals of the world, emphasizing natural history, distribution, taxonomy, ecology and morphology of mammalian species. Includes laboratory. Dual listed with ZOO 5370. *Prerequisite:* LIFE 2022. (Normally offered fall semester)

4380. Herpetology. 3. Introduces the ecology, behavior, morphology, evolution, systematics and conservation of reptiles and amphibians. Dual listed with ZOO 5380. *Prerequisite:* LIFE 2022.

4390. Environmental Toxicology. 3. Explores the disciplines of aquatic and wildlife toxicology from environmental, chemical, and regulatory perspectives. Emphasis on standard environmental toxicology testing methods, field studies, statistical analyses, and mechanistic principles, with discussions of contemporary issues in the field. Dual listed with ZOO 5390. *Prerequisites:* none.

4400. Population Ecology. 3. [M3♦(none)] Explores quantitative ecology of animal populations, emphasizing theoretical and empirical work. Provides modern coverage of principles of population ecology for wildlife majors and others who expect to deal with ecological problems in their careers. Dual listed with ZOO 5400. *Prerequisites:* LIFE 1010, 3400 and STAT 2050. (Normally offered spring semester)

4415. Behavioral Ecology. 3. Behavioral ecology applies empirical and theoretical approaches to ecological and evolutionary underpinnings for behaviors ranging from foraging and predation to social grouping and mating systems. Emphasizes comparative analyses (what phylogenetic patterns exist across diverse species?) as well as genetic/fitness benefits (how do individuals benefit from apparently puzzling behaviors?). Dual listed with ZOO 5415. *Prerequisites:* ZOO 3600 or LIFE 3400 or permission of the instructor. (Normally offered fall semester of odd-numbered years).

4425. Genetic Markers. 3. Overview of the use of genetic, molecular markers for the analysis of natural populations of plants and animals. Approaches range from individual identification to systematics, with a core focus on populations. Dual listed with ZOO 5425. *Prerequisite:* LIFE 3050.

4430. Limnology Laboratory. 2. Utilizes basic field techniques in limnology. Emphasizes analysis and interpretation of data obtained from field and laboratory exercises. *Prerequisite:* concurrent enrollment in ZOO 4440. (Offered fall semester)

4440. Limnology. 3. Studies ecology of inland waters; biological, chemical and physical features of lakes and streams. *Prerequisites:* LIFE 1010, 3400 and one year of chemistry. (Offered fall semester)

4540. Invertebrate Zoology. 4. Studies major invertebrate phyla of the animal kingdom. Studies each phylum with respect to morphological and taxonomic characteristics; functional and evolutionary relationships; environmental adaptations; life cycles of representative types. Includes laboratory. Dual listed with ZOO 5540. *Prerequisite:* LIFE 2022. (Offered fall semester)

4550. Wetland Ecology. 3. Study of the function of inland and coastal wetlands: hydrology, biogeochemistry, microbial ecology, distribution and production of algae and macrophytes, decomposition, contaminant processing, ecology of invertebrates and vertebrates, and foodweb structure. Roles of wetlands in aquatic and terrestrial landscapes, wetland classification

schemes, and conservation programs. One-day field trip required. Dual listed with ZOO 5550. *Prerequisites:* LIFE 1010; LIFE 2022 or 2023; CHEM 1030.

4560. Quantitative Conservation Biology. 4. Covers the application of ecology and genetics to conservation biology, emphasizing the use of mathematical analysis and quantitative thinking. Includes mathematical homework, discussion sections, computer labs, and independent student projects. Dual listed with ZOO 5560. *Prerequisite:* approval of instructor.

4670. Cell Physiology. 4. Focuses on the cellular mechanisms, functions, and pathways that define the cell as the fundamental living unit. Topics include metabolism, second messengers, cell ultrastructure, membrane excitability, transport physiology, contractile systems, cell division, and programmed cell death. Dual listed with ZOO 5670. *Prerequisites:* MOLB 3610, LIFE 3600.

4735. [5730] Advanced Topics in Physiology. 1-4 (Max. 12). Designed for graduate students specializing in Physiology or related fields. Examples of topics include endocrinology, cardiovascular, renal, neurological, respiratory, and metabolic physiology. Integrative topics (e.g. circadian rhythms, thermal stress) may also be included. Dual listed with ZOO 5735. *Prerequisites:* ZOO 3115 and 4125 or equivalent as approved by the instructor.

4740. Fish Culture and Nutrition. 3. Studies methods in artificial propagation of fishes. Includes spawning, hatchery methods, water quality requirements and nutritional requirements. Includes laboratory. *Prerequisite:* LIFE 2022, CHEM 1020. (Normally offered fall semester)

4900. Problems. 1-8 (Max. 8). For advanced students. Studies some particular problem or phase of zoology, or presents reviews and discussions of current advancement in zoological investigations. Content is arranged to suit individual needs of students. Satisfactory/Unsatisfactory only. *Prerequisites:* courses necessary to pursue the problem selected; prior written consent of the instructor.

4970. Internship in Wildlife Management. 1 (Max. 1). Provides practical field experience in resource management for undergraduate credit. Offered for S/U only. *Prerequisite:* consent of instructor. (Normally offered fall semester)

4971. Internship in Zoology and Physiology. 1-3 (Max. 6). Provides practical experience in selected biological fields by working with a professional to help bridge the gap between academic and the world of work. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor.

4975. Practicum in Laboratory Instruction. 1-3 (Max. 6). For advanced students. Students will assist GAs and professors in laboratory preparation and demonstration in undergraduate teaching labs. Satisfactory/Unsatisfactory only. *Prerequisite:* consent of instructor.

The College of Business prepares students for careers by providing quality education in business disciplines, creating and disseminating knowledge, and assisting in Wyoming's economic development. The College of Business expects the highest level of integrity from our administration, faculty, staff, students, and alumni.

The College of Business grew from roots established in 1899 when the UW School of Commerce was founded. While the programs offered have changed over the years, the college remains firmly committed to academic excellence and positive student experiences.

The college has three academic departments: accounting; economics and finance; and management and marketing. The college also houses the College of Business Internships and Online Programs Office which is instrumental in maintaining the college's link with the business world.

These units are committed to preparing all College of Business students to enter our rapidly-changing world. Successful graduates are fully prepared to compete in their chosen professions or in graduate school. More importantly, they are well-educated individuals prepared to live fulfilling lives, and to meet the challenges presented by the complex ethical, moral and cultural contexts of our times.

College of Business Learning Outcomes

The College of Business expects that its graduates:

1. Understand the nature of the various disciplines within business and how these disciplines fit together.
2. Possess in-depth knowledge of his or her discipline and use this disciplinary knowledge to solve business problems.
3. Possess the professional skills and personal attributes necessary for a successful career in their chosen field.

AACSB Accreditation

The business degree programs offered by the College of Business are accredited by AACSB-International. AACSB standards ensure that College of Business students are provided comprehensive, high-quality, well-rounded degree programs. The "Common Course Work" and the "Advanced Business Standing Prerequisites" (ABS) described on the following pages have been developed to meet the AACSB accreditation standards. Per accreditation guidelines, non-College of Business majors are limited to 30 hours of business courses, excluding economics courses.

A minimum of 50% of COB courses required for the major must be taken from the degree-awarding institution.

Programs of Study Undergraduate Degrees Bachelor of Science

Accounting
Business administration
Business economics
Economics
Finance
Management
Marketing

Graduate Degrees

Master of Science

Accounting
Economics
Finance

Master of Business Administration

Doctor of Philosophy

Economics

For more information on these graduate programs, see the *Graduate Bulletin*.

Student Advising Academic Advising

All College of Business undergraduate students, except economics majors, are advised by professional academic advisers in the College of Business Academic Advising Office (COB/AAO) in Room 202, Crane Hall. Economics students go to 162 Ross Hall to receive their faculty adviser assignment. CBEC majors will be advised by COB/AAO.

Career Advising

All career advising is conducted by College of Business faculty members. Students are encouraged to request career advice from their assigned faculty mentor. The COB/AAO assigns students to an appropriate faculty member for career advising.

Student Responsibilities

College of Business students are responsible for knowing and meeting requirements for graduation. In addition to degree requirements, all College of Business students must complete the advanced business standing requirements prior to enrollment in most upper-division (3000/4000-level) College of Business courses (see Advanced Business Standing Prerequisites section).

All students must have already completed any prerequisites listed (in addition to ABS for COB students), including having the appropriate class standing. Class standing means for a 2000-level course, the student has **earned** a minimum of 30 hours; 3000-4000-level, the student has **earned** a minimum of 60 hours. Students not meeting the prerequisites are identified and administratively dropped from those courses each semester.

Requirements for the Bachelor of Science Degree

Candidates for the Bachelor of Science degree in the College of Business must meet university, college, and departmental requirements. In addition to the university requirement that degree candidates hold a minimum cumulative grade point average of 2.00, degree candidates for the B.S. degree in the College of Business also must have a minimum 2.50 cumulative grade point average and a 2.50 grade point average in College of Business courses at the time of graduation. In addition, economics majors also must hold a minimum 2.50 grade point average for all economics courses.

A minimum of fifty percent of the students' four year program must be in non-business coursework. Up to nine hours of economics and six hours of statistics may be included in the non-business component.

College of Business degree candidates must earn a minimum of 120 semester hours depending on major including:

I. University Studies Requirements:

All freshmen who enter the University of Wyoming (UW) and students who enter a Wyoming Community College (CC) beginning in the fall of 2003 will be required to meet the new USP 2003 requirements for graduation. Wyoming CC students transferring to UW with an Associate of Arts or Associate of Science degree will have course work evaluated per the General Education Articulation Agreement between the University of Wyoming and Wyoming Community Colleges. Students enrolled at the University of Wyoming or a Wyoming Community College prior to the fall of 2003 have the option of satisfying either USP 1991 or USP 2003 requirements. Non-resident transfer students and Wyoming CC transfer students without an associate's degree will have course work evaluated on a course-by-course basis, based on all approved USP courses.

Academic advisers will help students select the appropriate courses to satisfy university studies requirements. Some College of Business requirements also meet university studies requirements.

A. Basic skills (USP 2003)	Hrs.
1. Writing	
a. USP Writing I course (WA).....	3
b. USP Writing II course—Mid-level writing or 2000-4000-level writing intensive course—Choose from list of approved courses (WB).....	3
c. USP Writing III course—Upper-level writing or 3000-4000-level writing intensive course—choose from list of approved courses (WC).....	3
2. Mathematics and quantitative reasoning	
a. Passing Math Placement Exam at level 3 or completion of MATH 1400 (QA)	3
b. MATH 2350 or 2200 (QB)	4
3. Oral Communications	
a. COJO 1010 (O)	3

B. Science: Two approved courses from one or more of the following categories (one must include a lab):

1. Biological science— (SB) Choose from list of approved courses	
2. Integrated science— (S) LIFE 1002	
3. Physical science— (SP) Choose from list of approved courses	
4. Earth science— (SE) Choose from list of approved courses	
Total hours of science.....	6

C. Intellectual Community and Information Literacy

1. ACCT 1010 (I).....	3
2. ACCT 1020 (L)	3

D. Cultural Context: Four courses required. Must include one course from each area.

1. Humanities—Choose from list of approved courses (CH)	3
2. ECON 1010 & 1020 (CS).....	6
3. Arts (CA)	3

E. U.S. & Wyoming Constitutions (V) ... 3

F. Diversity in US: One course required.
Choose from list of approved courses (D)..... 3

G. Global Awareness: One Course Required (G)..... 3

H. Physical Activity and Health (P)1

The number of hours of elective credit varies by department, and there is a limit on the number of military science courses that may be taken. ROTC courses will not count as upper division electives. Students should consult their academic advisers.

Students may not take courses for S/U (satisfactory/unsatisfactory) credit to satisfy university studies or college requirements, course requirements in the major, or courses outside the college required by the major department curriculum.

Advanced Business Standing Prerequisites

College of Business students must satisfy the following advanced business prerequisites prior to enrolling in most upper-division (3000/4000-level) College of Business courses:

1. Achieve junior standing by completing a minimum of 60 semester hours;
2. Complete 10 specific courses with a grade of C or better in each. These ten courses are: ECON 1010 and 1020, USP Writing I and II courses, ACCT 1020, IMGT 2400, ACCT 1010, MATH 2200 and 2205 or MATH 2350 and 2355 and STAT 2050 or 2070.
3. Achieve a cumulative grade point average of at least 2.50.

Common Course Work

College of Business majors take a common set of courses that expose them to the basic concepts, processes and technical skills necessary to complete a well-rounded high quality business education. The common course work includes FIN 3250, MGT 1040, DSCI 3210, IMGT 2400, MGT 3210, 4520, MKT 3210, ACCT 1010, and 1020.

Requirements for Non-College of Business Majors

Students in non-College of Business majors who wish to enroll in College of Business upper-division courses need not meet the advanced business standing prerequisites. However, they are required to meet individual course prerequisites listed in the bulletin, including class standing. This means for 2000-level courses, they must have earned a minimum of 30 hours. For 3000-4000-level courses, they must have earned a minimum of 60 hours.

In accordance with AACSB standards, students in non-College of Business majors may take no more than 25 percent of courses (30 hours) required for their degree programs in the College of Business.

Acceptance of Transfer Credit

The College of Business complies with UW policies regarding transfer credit discussed in the front section of this bulletin. The college has special course transfer arrangements with Wyoming community colleges that allow some courses taken at community colleges at the lower-division (freshman-sophomore) level to transfer for upper-division (junior) credit. Wyoming community college transfer students should contact the College of Business Academic Advising Office for details.

Students transferring to the College of Business from community colleges outside Wyoming and non-AACSB accredited colleges and universities may validate some courses for which upper-division business credit is sought. Students trans-

ferring from other AACSB accredited colleges and universities will have their courses reviewed for transfer on a case-by-case basis.

The College of Business does not accept transfer credits for COB courses with equivalents at UW when the grade earned was less than a C.

Beginning fall 2004, students must have a minimum 2.50 grade point average to transfer into the College of Business from across campus.

Business Administration Online Program

The College of Business offers students a business administration degree accredited by AACSB International and delivered through Online UW, the university's Internet campus. The program is designed to help students maximize their flexibility in the business world as it focuses on all functional areas in business.

After completing UW approved general education courses and business administration prerequisites at a community college or university, students are eligible to apply for admission into the online undergraduate business administration degree program.

Students will be required to apply to UW, have a 2.50 cumulative grade point average, and advanced business standing before being considered for admission into the business administration online program. The application for admission into the business administration degree program must be completed on or before March 15 for fall enrollment, October 15 for spring enrollment, and March 1 for summer enrollment. Students must also attain a 2.50 GPA for graduation for both College of Business and UW courses, and must take the ETS exam to graduate.

To ensure you the availability of required courses in this program, enrollment into courses is managed and approved by the College of Business Academic Advising office.

College of Business Minors

Minors are available to on-campus students through the College of Business in the areas of accounting, banking and financial services, business (not available to College of Business majors), decision science, economics, entrepreneurship, finance, international business, management, marketing, and marketing communication. Minors requirements may often be met by simply focusing the elective credits available in a student's major.

The minors program consists of course requirements ranging from 18 to 24 hours of study. A minimum grade of C must be earned in each course. Certification of a successful minor program completion occurs as part of the CAPP progress report, and the registrar notes the completion of the minor on student transcripts.

To earn a College of Business minor, students must first apply for admission to the minors program in the College of Business Academic Advising Office in 202 Crane Hall. To be admitted to College of Business minors program, students must have a minimum 2.50 cumulative UW GPA. Students must maintain a cumulative 2.50 GPA in the required College of Business courses for the minor to be awarded. Non-College of Business students must meet the individual course prerequisites listed in this bulletin, although they need not meet the advanced business standing requirements.

College of Business Student Intern Program

Local, regional, national and international internship opportunities are available to College of Business majors through the Student Intern Program located in the Internship and Online Programs Office (315 Crane Hall).

Internships match the needs of students for early experiences in business with the needs of participating organizations for managerial talent.

Cooperative Undergraduate Programs

The Concentration in Environment and Natural Resources

College of Business majors may earn a cross major in Environment and Natural Resources (ENR) in cooperation with the UW School of Environment and Natural Resources. The appropriate use of natural resources and awareness of environmental consequences of decisions have become major issues for business. Exposure to ideas, skills and sensibilities in these areas is critical to future business people. Students majoring in economics may elect an environment and natural resources concentration in which an economics approach to problem solving is stressed. For more information call the ENR office at (307) 766-5089.

Business (BUSN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1010. Introduction to Business Information Literacy. 0.5. [(none)♦L] Offers transfer students, online College of Business majors, and General Economics majors the opportunity to satisfy the Information Literacy component of the University Studies Program. Enrollment is restricted to College of Business students who meet the above descriptions. *Prerequisites:* none.

2000. Introduction to International Business. 3. [G1♦G] A broad survey of the field of international business which introduces basic concepts of international business activity and theory and reviews major foreign environmental forces--financial, economic and socioeconomic, physical, sociocultural, political, legal, labor, competitive and distributive--within the context of strategic management issues. Cross listed with INST 2000. *Prerequisite:* ECON 1010.

4540 [BADM 4540]. Global Business Issues. 1-6 (Max. 6). [G1♦(none)] Designed to give students a broad overview of current issues in international business. Includes classroom instruction and may include travel to a foreign country and visits to major foreign firms. A written assignment is required. Dual listed with BUSN 5540. *Prerequisite:* consent of instructor. (Offered once a year)

4900. Problems in International Business. 1-4 (Max. 4). Individual projects of a research nature, under direct supervision of a professor. Written report required. *Prerequisite:* consent of instructor.

4910. Selected Topics in International Business. 3. For advanced students; consists of an in-depth study of a selected area of international business. Specific area(s) to be considered in any given semester are printed in the class schedule. Topics may include globalization and business, international accounting, international management and negotiation, international issues in business ethics, or topics to doing business in a specific country or region. *Prerequisites:* junior standing and other courses, as appropriate, for specific area/topic being covered.

4920. International Business: Study Abroad. 1-6 (Max. 6). Credit for course work related to international business undertaken at foreign institutions. Students are responsible for submitting course materials for evaluation for credit by College of Business faculty prior to enrolling. Students arrange for the foreign institutions to send performance evaluations to the College of Business Academic Advising Office. *Prerequisite:* consent of department head.

4950. Business Basics for Engineers. 4. Module topics include an overview of business, organization and management, project management, accounting, financial and risk management, human resource management, marketing, sales, entrepreneurship, and decision-making. *Prerequisite:* selection by Engineering Committee.

Department of Accounting

141 Crane Hall, 766-3136

FAX: (307) 766-4028

Web site: business.uwyo.edu/acct

Department Chair: Penne Ainsworth

Professors:

PENNE AINSWORTH, B.S. Kansas State University 1983; M.Acc. 1984; Ph.D. University of Nebraska 1988; Professor of Accounting 2001, 1997.

KENTON B. WALKER, B.B.A. University of Wisconsin-Whitewater 1974; M.S. 1978; Ph.D. Texas A & M 1986; Professor of Accounting 2001, 1985.

STUART K. WEBSTER, B.A. Heidelberg College 1964; M.B.A. Bowling Green State University 1965; Ph.D. University of Iowa 1975; Professor of Accounting 1994.

Associate Professors:

GARY M. FLEISCHMAN, B.S. California State University—Chico 1984; M.S.A. 1987; M.S.T. San Jose State University 1991; Ph.D. Texas Tech University 1995; Associate Professor of Accounting 2002, 2000.

LINDA A. KIDWELL, B.A. Smith College 1984; Ph.D. Louisiana State University and Agricultural and Mechanical College 1993; Associate Professor of Accounting 2008, 2005.

Assistant Professors:

ROHIT SINGH, B.S. University of New Delhi 1996; M.S. University of Arizona 2005; Ph.D. 2008; Assistant Professor of Accounting 2008.

TERESA M. STEPHENSON, B.B.A. National University 1989; M.P.A. Indiana University 2000; Ph.D. University of Kentucky 2006; Assistant Professor of Accounting 2006, 2005.

Visiting Assistant Professor:

ANDREW D. HOLT, B.A. Kingston Polytechnic University 1990; M.Sc. London School of Economics and Political Science 1992; Ph.D. 2005; Visiting Assistant Professor 2009.

Academic Professionals:

JANICE A. BENSON, B.S. Kansas State University 1991; M.B.A. 1993; Associate Lecturer of Accounting 2004, 1999.

MICHAEL J. DOHERTY, B.S. University of Wyoming 1994; M.B.A. 2000; Associate Lecturer of Information Management 2006, 2000.

RONALD R. PEDERSEN, B.A. California State University 1971; B.S. University of Wyoming 2001; M.S. 2002; Associate Lecturer of Accounting 2008, 2003.

JO LYNNE STALNAKER, B.A. Southwestern College 1995; M.Ed. Wichita State University 2002; Assistant Lecturer of Information Management 2007.

Emeriti:

Richard G. Elmendorf

George R. McGrail

Suzanne S. Roe

Please Note:

Students who anticipate preparing themselves for the CPA examination following completion of their degree should be aware of the Wyoming statute that became effective July 1, 2005. Please see the state board's web site for more information: cpaboard.state.wy.us. The current curricula (B.S. and M.S.) enable students to satisfy the educational requirements to sit for the CPA exam in Wyoming and other jurisdictions.

The basic objectives of the accounting program are twofold: to provide students who do not intend to major in accounting with the basis for understanding the role accounting plays in business today; and to provide those students who desire to major in accounting with the educational background necessary for lifelong learning and a rewarding career in the accounting profession. The curriculum offered by the department attempts to blend the conceptual with the practical. Exposure to the underlying conceptual framework of accounting provides a basis for dealing with emerging accounting issues, while examination of technical pronouncements enables students to gain insight into practical issues encountered in an accounting environment.

Accounting majors may enter the professional world of accounting from a variety of directions. Choices available in the form of elective courses enable students to chart a course which leads them toward public accounting, private accounting, governmental or not-for-profit accounting, as well as other specialties which rely on a strong accounting background. Those students seeking professional certification such as the CPA, CMA or CIA are able to satisfy requirements to sit for these professional examinations.

All accounting majors must comply with requirements of the advanced business prerequisites for enrollment in upper-division courses, and must complete the common body of knowledge courses as listed previously. All accounting courses for the major require a minimum grade of C.

In addition to university, college, and departmental requirements cited previously, requirements for accounting majors include:

Accounting courses	27
ACCT 2240, 2230, 3430, 3070, 3830, 3610, 4060, 4050, 4600	
Accounting electives (select one)	3
ACCT 4075, 4540, 4010	
Total	30

Complete curriculum sheets as well as anticipated changes in course numbering are available from the College of Business Academic Advising Office in Crane Hall Room 202 of the College of Business.

Accounting (ACCT)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

1010 [2010]. Principles of Accounting I. 3. [(none)◀I] Provides a basic understanding of the financial accounting information role in business and society. Focuses on the recording and reporting of business operating, financing, and investing events. Provide insights on business and enables students to become familiar with shareholder/external party reporting conventions. *Prerequisites:* none. (Offered fall, spring and summer)

1020. [2020]. Principles of Accounting II. 3. [(none)◀L] Provides a basic understanding of the managerial accounting information role in business decision-making. Provides insights on how businesses operate and enables students to become familiar with the conventions used by business to make decisions and how accounting information is reported to managers. *Prerequisite:* ACCT 1010. (Offered fall, spring and summer)

2110 [3110]. Managerial Accounting. 3. [M3◀(none)] An introductory course concerned with the use of accounting information by nonaccountants for planning, product costing, performance assessment and non-routine decision making. Not available for credit for accounting majors. *Prerequisites:* ACCT 1010 and 1020 (or equivalents); non-accounting majors. (Offered fall, spring and summer)

2230. Intermediate Accounting I. 3. First of three courses studying financial reporting. Topics include recording and reporting events in the expenditure and revenue cycles. *Prerequisites:* ACCT 1010, 1020 and MATH 1400 with grades of C or better in each.

2240. Cost Accounting I. 3. Organizational uses of information to plan, make decisions, and evaluate performance. Specific topics include job order and process costing, cost estimation and CVP analysis, budgeting and variance analysis. *Prerequisites:* ACCT 1010, 1020 and MATH 1400 with grades of C or better in each.

3070. Tax I. 3. Introduction to a broad range of tax concepts applicable to corporations, partnerships, and individuals. Emphasis is on the role of taxation in the business decision-making process. Students are exposed to basic tax research and planning techniques. *Prerequisites:* ACCT 2240 and ACCT 2230 (or equivalents) with grades of C better in each; advanced business standing.

3100 [4100, 2000, 3000]. Financial Statement Analysis. 3. Advanced study of financial statements and how to analyze those statements from both an internal and external perspective. *Prerequisites:* FIN 3250 (or equivalent) with a grade of C or better; advanced business standing; non-accounting majors.

3430. Intermediate Accounting II. 3. Second of three courses studying financial reporting. Topics include recording and reporting events in the investing and financing cycles. *Prerequisites:* ACCT 2230 with grade of C or better; advanced business standing.

3610 [2040, 3010]. Accounting Information Systems I. 3. Provides an understanding of accounting information systems and internal controls. Emphasis on the use of current accounting technology, accounting software and internal control systems. *Prerequisites:* ACCT 2240 and ACCT 3430 (or equivalents) with grades of C or better in each; advanced business standing.

3700. Accounting Internship. 1-6 (Max. 6). Allows students to obtain college credit for experience in an approved accounting work situation. The general objectives are to increase students' understanding of business, specific types of accounting tasks and types of accounting employment through work experience. For credit, the job description and credit hours must be approved in advance and job performance must be reported and evaluated. Does not apply toward required 30 hours of accounting. *Prerequisites:* advanced business standing; junior standing and consent of instructor. (Offered based on sufficient demand and resources)

3830. Intermediate Accounting III. 3. Third of three courses studying financial reporting. Topics include full disclosure and special issues in expense and liability recognition. *Prerequisites:* ACCT 3430 with grade of C or better; advanced business standing.

4010. Accounting Information Systems II. 3. Advanced topics in accounting information systems. Focuses on a database approach to accounting system design and also explores special topics in accounting system technology. May be partially taught in a lab setting. *Prerequisites:* ACCT 3610 and 3830 (or equivalents) with grades of C or better in each; advanced business standing. (Normally offered fall semester)

4050. Governmental and Nonprofit Accounting. 3. Designed to introduce students to accounting for state and local governmental entities and nonprofit organizations. Students learn about the entity structure, accounting practice, accounting systems and reporting practices for these organizations. *Prerequisites:* ACCT 3830, and 3610 (or equivalents) with a grade of C or better in each; advanced business standing.

4060. Auditing I. 3. A study of the scope, activities, and responsibilities of professional auditors. Topics include assurance services by public accountants, operational and compliance auditing by internal and governmental auditors, fraud auditing, and the role of internal control in all audits. *Prerequisites:* ACCT 3070, 3830, and 3610 (or equivalents) with grades of C or better in each; advanced business standing.

4075. Individual and Estate Tax Planning. 3. Focuses on tax-planning strategies and techniques. Investigates a wide variety of topics, ranging from individual issues to estate, gift, trust, and small business tax planning. Dual listed with ACCT 5075. *Prerequisites:* ACCT 3070 (or equivalent) with a grade of C or better; advanced business standing. (normally offered summer)

4540. Cost Accounting II. 3. Advanced topics in cost accounting concerning the organizational uses of information to plan, make decisions, and evaluate performance. *Prerequisites:* ACCT 2240 with a grade of C or better; advanced business standing. (Normally offered spring semester)

4600. Professionalism and Ethics. 3. [(none)◀WC] Examines professional ethics for accountants from both a philosophical and business perspective. Moral development, ethical reasoning, and ethical decision making provides a framework for examining the importance of ethics in the accounting profession. Professional guidance on ethics in accounting is also examined, including the AICPA Code of Professional Conduct, the Sarbanes-Oxley Act, and the codes for other professional accounting organizations. *Prerequisites:* ACCT 3070, 3830 3610 4050 and 4060 (or equivalents) with grades of C or better in each; advanced business standing.

4900. Problems in Accounting. 1-4 (Max. 4). An arrangement whereby students may investigate a particular problem area in accounting on an individual basis. *Prerequisites:* 6 hours in accounting; advanced business standing; junior standing; and written consent of instructor. (Offered based on sufficient demand and resources)

Information Management (IMGT)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

2400. Introduction to Information Management. 3. Concerned with the role of information systems in managing organizations to make them more competitive and efficient. Specific topics include organizational and technical foundation of information systems and building and managing systems. *Prerequisite:* none.

3400. Database Management Systems. 3. Concerned with the fundamentals of modern database information systems. Specific topics include database systems design, entity-relationship models, relational, hierarchical, and network database models, query languages, and data warehousing. *Prerequisite:* IMGT 2400.

3450. Systems Analysis and Design. 3. Concerned with the analysis and conceptual design of information systems. Specific topics include systems planning, requirements analysis, process modeling and redesign, flexibility analysis, architectural selection, and specification of alternatives. *Prerequisite:* IMGT 2400.

4990. Contemporary Topics in Information Management. 1-3 (Max. 6). Concerned with contemporary topics in information management and serves as elective credits for a minor in information management. A variety of subjects may be considered for this course including corporate information systems, object oriented technology, management of information technology, decision support systems, and data communication and network. *Prerequisites:* IMGT 3400 and 3450. (Offered based on sufficient demand and resources)

Department of Economics and Finance

162 Ross Hall, 766-2175

FAX: (307) 766-5090

Web site: business.uwyo.edu/EconFin

Department Chairman: Robert Godby

John S. Bugas Professor of Economics:

EDWARD B. BARBIER, B.A. Yale College, Yale University 1979; M.Sc. London School of Economics 1980; Ph.D. Birkbeck College, University of London 1986; Professor of Economics 2000.

H.A. (Dave) True, Jr. Chair in Petroleum and Natural Gas Economics:

CHARLES F. MASON, A.B. University of California 1977; Ph.D. 1983; Professor of Economics 1994, 1982.

John A. Guthrie, Sr. Distinguished Professor of Banking and Financial Services:

SHERRILL SHAFFER, B.A. Rice University 1974; Ph.D. Stanford University 1981; Professor of Finance 1997.

Stroock Professor of Natural Resource and Environmental Economics:

JASON F. SHOGREN, B.A. University of Minnesota-Duluth 1980; Ph.D. University of Wyoming 1986; Professor of Economics 1995.

Professors:

TIMOTHY J. CONSIDINE, B.A. Loyola University 1975; M.S. Purdue University 1977; Ph.D. Cornell University 1981; Professor of Economics 2008.

OWEN R. PHILLIPS, B.A. Stanford University 1974; Ph.D. 1980; Professor of Economics 1995, 1985.

FREDERIC P. STERBENZ, B.S. Massachusetts Institute of Technology 1975; M.A. University of Pennsylvania 1977; Ph.D. 1981; Professor of Economics and Finance 2003, 1987, 1981.

MARKA. SUNDERMAN, B.S. University of Illinois, Urbana-Champaign 1974; M.S. 1976; Ph.D. 1986; Professor of Finance 2003, 1992, 1986.

JOHN T. TSCHIRHART, B.S. Johns Hopkins University 1970; M.S. Purdue University 1973; Ph.D. 1975; Professor of Economics 1985.

Associate Professors:

ROBERT GODBY, B.S. Trent University 1990; M.A. University of Guelph 1992; Ph.D. McMaster University 1997; Associate Professor of Economics 2003, 1997.

DAVID M. AADLAND, B.A. Augustana College 1991; M.S. University of Oregon 1996; Ph.D. 1997; Associate Professor of Economics 2005, 2003.

Assistant Professors:

NICOLE CHOI, B.A. Chungbuk National University 2002; M.B.A. Washington State University 2004; Ph.D. 2009; Assistant Professor of Finance 2009.

DAVID C. FINNOFF, B.S. University of Wyoming 1994; Ph.D. 2001; Assistant Professor of Economics 2004.

JAMES E. GUNDERSON, B.A. University of Nebraska-Lincoln 1997; Ph.D. University of Minnesota 2004; Assistant Professor of Finance 2004.

THORSTEN M. JANUS, B.A. University of Copenhagen 2000; M.A. University of California at Santa Cruz 2003; Ph.D. 2006; Assistant Professor of Economics 2006.

ALEXANDRE SKIBA, Specialist Diploma Rivne State Technical University 1999; M.S. Purdue University 2001; Ph.D. 2003; Assistant Professor of Economics 2008.

HILLA SKIBA, B.A. University of Kansas 2002; M.A. 2004; Ph.D. 2008; Assistant Professor of Finance 2008.

LEE W. SANNING, B.A. Hanover College 1991; M.S. University of Wyoming 1999; Ph.D. Indiana University 2003; Assistant Professor of Finance 2003.

TATYANA SOKOLYK, B.S. West Texas A&M University 1999; M.S. 2000; Ph.D. Pennsylvania State University 2007; Assistant Professor of Finance 2007.

AARON STRONG, B.A. Luther College 1996; M.S. University of Colorado 1998; M.A. 2001; Ph.D. 2004; Assistant Professor of Economics 2008.

KLAAS T. VAN 'T VELD, B.Sc. University of London 1992; M.S. University of California-Berkeley 1993; Ph.D. 1997; Assistant Professor of Economics 2004.

Professors Emeriti:

John W. Birch, Curtis A. Cramer, Thomas D. Crocker, Ralph C. d'Arge, William E. Morgan

Business Economics Major

The science of efficient allocation, economics has much to offer students in the way of general and specialized preparation for positions in business, as well as government and the academic profession.

In addition to university and college requirements cited previously, requirements for business economics majors include:

	Hrs.
1. ECON 3010,3020, 4240 or 4250.....	9
2. Economics electives.....	15
At least 12 hours must be 4000-level courses	
3. Common business course work.....	18
MGT 1040, FIN 3250, MGT 3210, DSCI 3210, MKT 3210 and MGT 4520	
4. IMGT 2400	3
5. Electives	26

All economics majors must comply with requirements of the advanced business prerequisites for enrollment in upper-division courses.

Economics majors must hold a 2.50 cumulative grade point average in all economics courses at graduation, as well as a minimum 2.50 cumulative UW grade point average and a minimum 2.50 grade point average in all College of Business courses.

With approval of the department chair, students may substitute work in certain areas of accounting, agricultural economics, business administration, history, political science, finance, mathematics, statistics or law for 6 hours of 4000-level economics courses.

Students who intend to continue on to graduate work are urged to give special attention to courses in economics theory, statistics and mathematics. Those planning a career in econometrics or mathematical economics should consult the department head as to mathematics and statistics requirements in these fields of study.

The Department of Economics offers programs leading to the Master of Science degree and Ph.D. degree. See the *Graduate Bulletin* for a detailed description of these programs.

Suggested Course Sequence

FRESHMAN YEAR: Fall **Hrs.**

ECON 1010	3
ENGL 1010	3
MATH 2350 or 2200	4
University Studies Global Awareness	3
University Studies Science course.....	3-4
Physical education	1
Total Hours	17-18

FRESHMAN YEAR: Spring **Hrs.**

ECON 1020.....	3
ECON 1200	3
MATH 2355 or 2205.....	4
University Studies Science course.....	3-4
Non-business elective	3
Total Hours	16-17

SOPHOMORE YEAR: Fall **Hrs.**

ACCT 1010	3
IMGT 2400.....	3
University Studies Writing II course	3
Economics Elective	3
Non-business electives.....	4-5
Total Hours	16-17

SOPHOMORE YEAR: Spring **Hrs.**

ACCT 1020.....	3
COJO 1010	3
STAT 2010.....	3
University Studies Cultural Context (Humanities)	3
Electives	3-4
Total Hours	15-16

JUNIOR YEAR: Fall **Hrs.**

BADM 1040.....	3
ECON 3010.....	3
ECON 4240 or 4250	3
ENGL 4010.....	3
Elective	3
Total Hours	15

JUNIOR YEAR: Spring **Hrs.**

ECON 3020	3
FIN 3250	3
MKT 3210.....	3
Electives	3-4
Total Hours	12-13

SENIOR YEAR: Fall **Hrs.**

DSCI 3210.....	3
MGT 3210.....	3
Economics electives	6
Electives	4
Total Hours	16

SENIOR YEAR: Spring **Hrs.**

MGT 4520	3
Economics electives	6
Electives	4
Total Hours	12
Credits for degree	120

Economics Undergraduate Major

The economics major in the College of Business must complete 30 semester hours in economics courses.

Basic requirements for the B.S. degree include: ECON 1010, 1020, 3010, 3020, 4240 or 4250, and 15 hours of upper level economics electives; STAT 2010 or 2070 and one year of calculus sequence, MATH 2200 and 2205, or 2350 and 2355. Upon securing the approval of the department head, a student may substitute work in certain areas of accounting, agricultural economics, business administration, history, political science, finance, mathematics, statistics or law for 6 hours of the 4000-level economics electives.

This program allows considerable flexibility for the student to specialize in interdisciplinary study. For example, the student can be advised on selecting upper level division courses for pre-law study, political economy, environmental and natural resources, women's studies, and international studies.

Students who intend to continue in graduate work are urged to give special attention to courses in economic theory, statistics and mathematics. Those planning a career in mathematical economics or econometrics should consult the department head regarding the mathematics and statistics requirements in these fields of study.

Graduate Work

The College of Business Department of Economics and Finance offers programs leading to the Master of Science degree, and to the Ph.D. degree. See the *Graduate Bulletin* for a detailed description of these programs.

Suggested B.S. Program in Economics

Suggested Course Sequence

FRESHMAN YEAR: Fall **Hrs.**

ECON 1010	3
ENGL 1010	3
MATH 1400 or 1450	3
University Studies Cultural Context (Humanities/Arts).....	3
Physical education	1
Total Hours	13

FRESHMAN YEAR: Spring **Hrs.**

ECON 1020.....	3
University Studies Cultural Context (Humanities/Arts).....	3
MATH 2350 or 2200	4
ECON 1200	3
University Studies	3
Total Hours	16

SOPHOMORE YEAR: Fall		Hrs.
Biological, physical, or earth sciences	.....	4
STAT 2010, 2050 or 2070	.....	3
ECON 3010	.....	3
MATH 2205 or 2355	.....	4
Total Hours		14

SOPHOMORE YEAR: Spring		Hrs.
Biological, physical, or earth sciences	.....	4
ECON 3020	.....	3
University Studies Writing II course	.....	3
University Studies Diversity	.....	3
Elective	.....	3
Total Hours		16

JUNIOR YEAR: Fall		Hrs.
University Studies Writing III course	.....	3
Economics electives—upper level	.....	6
Electives—upper level	.....	6
Total Hours		15

JUNIOR YEAR: Spring		Hrs.
Economics electives—upper level	.....	6
Electives—upper level	.....	9
Total Hours		15

SENIOR YEAR: Fall		Hrs.
ECON 4240 or 4250	.....	3
Economics elective—upper level	.....	3
Electives—upper level	.....	9
Total Hours		15

SENIOR YEAR: Spring		Hrs.
Electives—upper level	.....	3
Electives	.....	12
Total Hours		15
Credits for degree		120

Economics (ECON)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Global Economic Issues. 3. [C2, G1↔G] Incoming students are introduced to basic principles of economics through the examination of contemporary global economic problems. Issues include sustainable development, economic causes of wars, global energy dependence, patterns of international capital flows, foreign aid, the brain drain and the emerging global business community. Topics selected will define the set and level of economic principles introduced. Cross listed with INST 1000.

1010. Principles of Macroeconomics. 3. [C2↔CS] A beginning study of how economic society is organized and uses scarce resources to provide for its material wants. National income analysis; business cycles; the banking system; monetary and fiscal policy. Inflation and unemployment. Cross listed with AGECE 1010.

1020. Principles of Microeconomics. 3. [C2↔CS] A basic study of value and price theory, monopoly and public policy; markets for productive goods and services; alternative forms of economic organization; international trade. Cross listed with AGECE 1020.

1200. Economics, Law and Government. 3. [V1↔V]

Markets and free enterprise depend on supportive legal and political institutions. The course exposes students to the U.S. political economy. Important relationships between market development, the legal framework and the political system are presented. The U.S. and Wyoming constitutions are studied to show their importance to free enterprise. Topics deal with public choice, cost-benefit analysis in policy, the importance of property rights and regulation. (Offered fall and spring semesters)

2100. Introduction to Money and Banking. 3. [C2↔(none)]

An introduction to the entire area of money and public finance. Oriented towards students wishing to obtain a broad general understanding of importance of money and public finance upon economic activity. Covers money and private financial institutions, monetary theory and policy, as well as public finance and fiscal policy. Credit will not be allowed for more than one of: ECON 2100 or FIN 4520. *Prerequisites:* ECON 1010, 1020.

2400. Economics of the Environment. 3. [C2, W2↔(none)]

This introductory course examines in detail the relationship between the economy and the natural environment. Primary attention is given to efficient environmental management and policies. Current environmental issues are studied and evaluated from an economic perspective. *Prerequisites:* ECON 1010, 1020. (Offered based on sufficient demand and resources)

2500. The Impact of the Union Pacific on Wyoming History. 3. [W2, C2↔(none)]

Students will experience and interpret the impact of the building of the Union Pacific Railroad on the history and culture of Wyoming through the lens of three disciplinary perspectives. Students will explore how the railroad impacted Wyoming geography, economic development and the people of the state through personal research projects. Cross listed with GEOG 2500 and HIST 2500.

3010 [2010, 4010]. Intermediate Macroeconomics. 3. [M3↔(none)]

A presentation and study of national income aggregates and accounting; equilibrium analysis of output, employment and the price level; general equilibrium analysis; and an introduction to economic dynamics. *Prerequisites:* ECON 1010 and 1020, QA and MATH 2200/2350. (Offered fall and spring semesters)

3020 [2020, 4020]. Intermediate Microeconomics. 3. [M3↔(none)]

Relative to a beginning course, this is a more advanced course on the theory of demand, production, cost and supply; and the theory of the firm, including market price under monopoly, monopolistic competition and oligopoly. Attention is given to the theory of factor prices and topics on welfare economics. *Prerequisites:* ECON 1010 and 1020, QA, and MATH 2200/2350. (Offered fall and spring semesters)

4000. Conference. 1-4 (Max. 4). A tutorial-conference course intended to give economics majors an opportunity to engage in extensive research in some aspect of economics. Specific

topics vary with students' needs and interests. *Prerequisites:* ECON 3010, 3020. (Offered fall, spring and summer)

4030. Managerial Economics. 3. An advanced course on the theory of demand, production, cost, and supply; the theory of the firm, including market price under monopoly, monopolistic competition and oligopoly. Attention is given to the theory of factor prices and topics on welfare economics. *Prerequisite:* senior standing or above. Credit cannot be earned for this course and ECON 3020.

4115 [4110, 611]. Time Series Analysis and Forecasting. 3. [M3↔(none)]

Designed to have an applied orientation in a number of estimation procedures, such as exponential smoothing and forecasting with and without the presence of trends and seasonal repetitive patterns. The Box-Jenkins procedure will be covered in detail. Students become proficient in the application of statistical tools used in time series analysis of economic data. Cross listed with STAT 4115. *Prerequisites:* STAT 3050 or equivalent; STAT 4015/5015 recommended. (Offered based on sufficient demand and resources)

4230 [4340]. Intermediate Econometric Theory. 3. [M3↔(none)]

Covers simple and multiple regression models, problems of estimation, hypothesis and diagnostic testing, dummy variable, autoregressive and distributed lag models, and time-series analysis. The objective is to understand the underlying theory of econometric modeling and obtain operational ability to construct, estimate, and test econometric models. Cross Listed with AGECE 4230; dual listed with ECON 5230. *Prerequisites:* ECON 3020, STAT 2050 and MATH 2350. (Normally offered spring semester)

4240. History of Economic Thought. 3.

Focuses on the most influential economists who have shaped the evolution of economic thinking throughout history. Emphasis is on tracing the evolution of economic thought into the modern intellectual foundation of economics. Traces changing economic thought from mercantilism through modern paradigms. *Prerequisites:* ECON 3010 and 3020.

4320. Mathematical Economics. 3. [M2↔(none)]

A study of the principal mathematical techniques as used in economic theory and modeling. Topics include fundamental concepts underlying marginal analysis, linear programming and comparative statics. *Prerequisites:* ECON 3010, 3020, MATH 2205 or 2355. (Normally offered fall semester)

4350. Game Theory. 3.

Discusses a variety of important concepts from game theory – the study of how individuals interact strategically. The course focuses on the development of students' ability to think strategically. To that end the course covers basic concepts in game theory; notions related to credibility; and notions related to forming and evaluating strategies. *Prerequisites:* ECON 3010 and 3020.

4360. Seminar in Economics. 1-3 (Max. 6). An analysis of selected problems of economics theory. Topics vary with student interest and with current stress in economics theory. *Prerequisites:* ECON 3010, 3020. (Offered based on sufficient demand and resources)

4400. Environmental Economics. 3. [M3♦(none)] The study of economic issues involved in development and maintenance of human environment. Problems of resource allocation, social cost, pollution (water and air) and policy issues involved in these areas. Major emphasis is directed toward evaluating welfare implications of these environmental issues. *Prerequisites:* ECON 3020 and junior standing. (Offered based on sufficient demand and resources)

4410. Natural Resource Economics. 3. A study of the economic issues associated with renewable and nonrenewable resources. Special emphasis is directed toward hard rock minerals, fossil fuels, fisheries and forestry resources. Issues of optimal extraction and depletion, effect of alternative market structures, and role of uncertainty are addressed with regard to efficient management and allocation of these resources. *Prerequisite:* ECON 3020 and junior standing. (Offered based on sufficient demand and resources)

4420. Seminar: Economics for ENR. 2-4. For students with little or no background in economics interested in economic perspectives on ENR. Emphasis is on integrated ecology-economics approach to investigate the economics environmental services, biological resources, and the ecosystems that contain them. CBEC and ECON majors cannot earn upper-division economics credit for this course. *Prerequisites:* successful completion of QB and senior standing.

4450. Monetary Theory. 3. [M3♦(none)] Topics in this course center on theories of the value of money and price levels; central banking theory and policy; international exchange; world monetary institutions. *Prerequisite:* ECON 3010, MATH 2200 or 2350. (Offered based on sufficient demand and resources)

4520. Public Finance. 3. [M3♦(none)] Analyzes public expenditures, revenues, debts; their causes, distribution and trends, effects upon the economy. Emphasis is on the federal aspect. *Prerequisites:* ECON 1010 and 1020, QA.

4530. State and Local Finance. 3. [M3♦(none)] The study of state and local revenues, expenditures, fiscal administration and policies, with special emphasis on Wyoming problems. *Prerequisites:* ECON 1010 and 1020; QA. (Offered based on sufficient demand and resources)

4700. Economic Development. 3. Encompasses the study of institutional and social, as well as economic, mechanisms for modernizing an economy while eliminating absolute poverty. Covers the economic concepts that help us explain why some countries are poor and how economic policies can assist those countries in becoming

more developed. Case studies of specific country experiences are presented along with the economic theories in an integrated manner. *Prerequisite:* ECON 3010.

4710. Comparative Systems. 3. [G1♦(none)] The study of the origins and characteristics of modern economic systems; similarities and differences in the systems of the U.S., Great Britain, Soviet Union, Germany, India and China. Cross listed with INST 4710. *Prerequisites:* ECON 3010; QA. (Offered based on sufficient demand and resources)

4720. International Trade. 3. [G1, M3♦(none)] The gains from specialization and trade are studied, as are explanations of trade patterns among countries, policies affecting trade such as tariffs, quotas, tax breaks, subsidies, cartels and price stabilization plans. Topics on labor migration and multinational corporations are covered. *Prerequisites:* ECON 3020 and junior standing. (Normally offered fall semester)

4740. International Finance. 3. [G1, M3♦(none)] The focus is on foreign exchange markets, balance of payments analysis and effects of international trade and capital flows on the domestic economy. Policies to correct payment deficits, gold, international liquidity and international financial institutions are studied. *Prerequisites:* ECON 3010 and 3020; QA.

4800. Labor Economics. 3. [C2♦(none)] The study of labor supply, labor demand, wage determination, resource allocation and income distribution. Emphasis is on public policy. *Prerequisites:* ECON 3010 and 3020; QA. (Offered based on sufficient demand and resources)

4820. Industrial Organization and Public Policy. 3. The conduct and performance of market structures is analyzed. Structures include perfect competition, monopolistic competition, oligopoly and monopoly. Special attention is given to the study of strategic behavior in industry. Game theory is introduced. Public policy against monopoly practices is reviewed. *Prerequisite:* ECON 3020. (Offered based on sufficient demand and resources)

4830. Telecommunications Policy and Regulation. 3. Deals with telecommunications policy and regulation. Major emphasis is placed on specific contemporary issues in telecommunications policy such as the emergence of competition, the states and federal mix of regulations, alternative forms of regulation and technology and competitive industrial structure. *Prerequisites:* ECON 1010 and 1020.

4840. Public Utility Economics. 3. The economic foundations of the public utility industries; the theory of public utility rate making; pricing and resource allocation; and the effectiveness of utility regulation. *Prerequisites:* ECON 1010 and 1020; QA. (Offered based on sufficient demand and resources)

Finance Major

Modern Business is characterized by its emphasis upon finance. The application of sound financial management principles often will be the difference between success and failure in business.

Courses prescribed for those who wish to major in finance are designed to provide a background for financial management of business concerns and, if students desire, to specialize in bank management, corporation finances, investment management and real estate. Since financial policies of business enterprises are subject to economic principles which make all businesses financially interdependent and sensitive to disturbances in the economic structure, students in this field should study the economic, as well as the technical, administrative aspects of finance and accounting. Prescribed work in this area attempts to emphasize all three phases of the subject.

In addition to university, college and departmental requirements cited previously, requirements for finance majors include:

	<i>Hrs.</i>
1. FIN 4520	3
2. Finance electives	12
3. Accounting elective	3
(junior/senior level)	
4. Economics electives	6
5. Restricted electives	3
(Must be junior/senior level FIN, ACCT or ECON courses)	

Suggested Course Sequence

FRESHMAN YEAR: Fall		<i>Hrs.</i>
ACCT 1010		3
ECON 1010		3
ENGL 1010		3
MATH 1400/1405/2350/2200		3-4
University Studies Global Awareness		3
Physical education		1
Total Hours		16-17

FRESHMAN YEAR: Spring		<i>Hrs.</i>
ACCT 1020.....		3
ECON 1200		3
MATH 2355/2205.....		3-4
University Studies Science course.....		3
Total Hours		16-17

SOPHOMORE YEAR: Fall		<i>Hrs.</i>
IMGT 2400		3
University Studies Writing II course		3
University Studies Diversity course.....		3
University Studies Science course.....		3-4
University Studies Cultural Context (Humanities).....		3
Total Hours		15-16

SOPHOMORE YEAR: Spring		<i>Hrs.</i>
COJO 1010		3
STAT 2010.....		4
BADM 1040.....		3
ACCT 2000.....		3
University Studies Cultural Context (Arts)		3
Total Hours		16

JUNIOR YEAR: Fall		Hrs.
Economics elective.....		3
FIN 3250		3
MGT 3210		3
Electives		6
Total Hours		15

JUNIOR YEAR: Spring		Hrs.
MKT 3210		3
DSCI 3210		3
Economics elective.....		3
FIN 4520		3
Finance elective3		
Total Hours		15

SENIOR YEAR: Fall		Hrs.
Finance electives.....		6
ENGL 4010.....		3
Restricted Elective.....		3
Electives		3
Total Hours		15

SENIOR YEAR: Spring		Hrs.
MGT 4520		3
Finance electives.....		6
Electives		6
Total Hours		15
Credits for Degree		122

Finance (FIN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2010 [3010]. Personal Finance and Investments. 3. A general course treating the fundamentals and organization of the securities markets, types of orders, elementary market computations, basic investment management and etc. The course is for students university-wide who have an interest in investments.

3250. Managerial Finance. 3. [M3↔(none)] Deals with management of capital in a business firm. It treats policies and actions relating to asset structure, risk, income and cash flows. Operating and financial analysis is introduced. *Prerequisites:* ACCT 1010; STAT 2010.

4100. Internship: Finance. 1-4. Provides students with practical business knowledge, policy, procedures and decision making. Students work as interns in operating organizations. *Prerequisites:* FIN 3250 and advanced business standing, written consent from instructor. (May not be used to substitute an Economics or Finance elective)

4310. Investment Management. 3. [M3↔(none)] A technical course involving the determination of security desirability, measuring and evaluating risk and return and etc. *Prerequisites:* FIN 3250, advanced business standing, finance major or minor.

4360. Options and Futures. 3. Provides an introduction to financial futures such as currency futures and interest rate futures. Explores the markets on which they are traded. Also analyzes pricing of options and other derivative securities. Includes the leverage and risk aspects of options. *Prerequisite:* FIN 3250.

4400. Empirical Finance. 3. Involves the application of basic econometric methods to the analysis of financial data. The course is focused on empirical estimation and analysis of theoretical financial models. The study of market micro-structure models and other characteristics of financial data are included. Dual listed with FIN 5400. *Prerequisites:* FIN 3250, IMGT 2400 and advanced business standing.

4410. Working Capital Management. 3. Topics in this course include management of accounts receivable, cost and near money, operations cost of credit, short term requirements and repayment abilities. *Prerequisites:* FIN 3250, ACCT 1020, IMGT 2400 and advanced business standing.

4420. Long-Term Capital Management. 3. A course designed to give students exposure to extensive analysis of problems in management of capital structure and capital expenditures. *Prerequisites:* FIN 3250, STAT 2010, IMGT 2400 and advanced business standing.

4460. Multinational Finance. 3. Deals with quantitative techniques used by financial managers and investors in global financial markets. Topics covered include exchange rate determination, management of foreign exchange exposure, international portfolio investment, and current topics in international finance. *Prerequisite:* FIN 3250.

4510. Bank Management. 3. Deals with financial decision-making in financial institutions, particularly emphasizing commercial banks. Topics covered include managing financial assets, deposit acquisition and capital management. *Prerequisites:* FIN 3250, IMGT 2400 and advanced business standing.

4520. Financial Markets and Institutions. 3. [M3↔(none)] Portfolio and capital market theory and the analysis of risk are introduced. Integrates theory into practical aspects of financial markets and management of financial institutions. *Prerequisites:* FIN 3250, STAT 2010 or 2050/2070, IMGT 2400 and advanced business standing.

4540. Banking Policy. 3. A sequel to FIN 4510, it integrates, extends, and applies the central concepts of bank management in a series of case studies, some of which will be analyzed in teams. Issues of public policy and bank regulation are also incorporated in the cases. *Prerequisite:* FIN 4510.

4560. Entrepreneurial Accounting and Finance. 3. Expands business knowledge by focusing attention on accounting and finance concerns that are vital to new ventures. Focuses on issues that must be addressed to assist these businesses in meeting their objectives of growth, preparation for a public offering, and exit strategies. Cross listed with BADM 4560. *Prerequisites:* ACCT 1010, BADM 2500, FIN 3250.

4610. Real Estate and Urban Economics. 3. Discusses the physical, legal and economic fundamentals of real estate using an integration of real estate markets, mortgage financing, appraisal principles, and investment analysis. Topics include basic property and contract law, leases, financing, taxation, and the fields of property management, finance, appraisal, brokerage, and investments. *Prerequisite:* Advanced business student.

4710. Risk Management. 3. [M3↔(none)] Analyzes the risk management and insurance problem in the business enterprise with emphasis on methodology for risk analysis; techniques for risk and loss control; and models for risk management decision-making. *Prerequisites:* FIN 3250, IMGT 2400 and advanced business standing.

4800. Real Estate Finance. 3. Forms of ownership and investment in real estate are examined. In particular, the course includes discussion of markets and methods of financing real property. Real estate finance topics are covered both from the perspective of borrowers and lenders. *Prerequisites:* FIN 3250 and advanced business standing.

4810. Real Estate Appraisal. 3. Covers the basics of appraisal, the three main approaches to valuation, reconciliation, and report. Topics of mass appraisal and multiple regression analysis are also considered. Deals with elements of real estate appraisal as they apply to residential, commercial/industrial and rural real property. *Prerequisites:* FIN 3250 and advanced business standing.

4900. Problems in Finance. 1-4 (Max. 4). Students register on an individual basis to study any phase of finance not included in organized courses. Written report required. *Prerequisites:* FIN 3250, IMGT 2400, advanced business standing, senior standing and written consent of instructor.

4910. Selected Topics in Finance. 3 (Max. 6 seniors and M.S.; Max. 9 Ph.D.). The material covered involves extensive in-depth investigations into topics which are specialty areas of the instructor in charge in any given term. *Prerequisites:* 9 hours in finance including FIN 3250, IMGT 2400 and advanced business standing.

Department of Management and Marketing

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Department Chairman: John H. Jackson

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JOHN H. JACKSON, B.B.A. Texas Technological University 1967; M.B.A. 1968; Ph.D. University of Colorado 1973; Professor of Management 1982, 1973.

RICHARD C. MCGINITY, A.B. Princeton University 1966; M.B.A. Harvard Business School 1973; D.B.A. 1980; Bill Daniels Chair of Business Ethics 2007; Professor of Management and Marketing 2009.

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Associate Professors:

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TERRI L. RITTENBURG, B.S. University of Nebraska-Lincoln 1978; M.A. 1980; Ph.D. 1988; Associate Professor of Marketing 1995, 1989.

Assistant Professors:

JOSEPH T. COOPER, B.S. Case Western Reserve University 1997; M.B.A. 2003; Ph.D. Ohio State University 2009; Assistant Professor of Management 2009.

DAVID M. HUNT, B.S.B.A. University of Arkansas 1990; M.B.A. Colorado State University 1996; Ph.D. University of Missouri 2005; Assistant Professor of Marketing 2005.

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STEPHANIE A. ONETO, B.S. University of Nebraska-Lincoln 1999; M.A. University of Houston 2001; Ph.D. 2007; Assistant Professor of Marketing 2007.

KAREN L. PAGE, B.A. University of Utah 1985; J.D. University of Denver 1988; M.A. University of Colorado 1995; M.A. Stanford University 2000; Ph.D. 2002; Assistant Professor of Management 2002.

MELEA PRESS, A.B. Wellesley College 1996; Ph.D. Pennsylvania State University 2007; Assistant Professor of Sustainable Business Practices 2008.

CRAIG SOROCHUK, B.S. University of Alberta 1995, 1998; M.B.A. College of William and Mary 2004; Ph.D. University of Western Ontario 2009; Assistant Professor of Management and Marketing 2009.

ROBERT D. SPRAGUE, B.S.B.A. University of Denver 1980; J.D. 1985; M.B.A. University of Southern California 1999; Assistant Professor of Management 2004.

Academic Professionals:

R. CLIFFORD ASAY, B.S. Brigham Young University 1991; M.B.A. Portland State University 1998; Assistant Lecturer 2006.

DELBERT E. WELLS, B.A. Northwestern State University 1961; M.A. University of New Mexico 1968; J.D. 1972; Senior Lecturer of Management 1989.

Professors Emeriti:

Robert E. Allen, Anthony F. McGann, J. Brooks Mitchell, Robert G. Roe, Jack C. Routson, Samuel G. Taylor

The Department of Management and Marketing offers programs of study leading to the Bachelor of Science degree in (1) business administration, (2) management, or (3) marketing. The departmental requirements for each of these degree programs are listed below.

All majors in the Department of Management and Marketing must meet requirements of the advanced business prerequisite for enrollment in upper-division courses, must complete the common body of knowledge courses as listed previously and require a minimum grade of C for courses in their major and MGT 4520.

Students outside the business major may take business courses, and are not held to advanced business standing requirements, but they should first check with course instructors to see if they meet other prerequisites. The College of Business Academic Advising Office (COB/AAO) oversees the formal petition process that provides non-majors permission to take business courses, and COB/AAO should be the next step in getting permission after getting consent of the instructor.

Business and accounting 3000- and 4000-level courses are reserved for those with junior or senior level standing whether majors or non-majors.

Entrepreneurship Emphasis

The college recommends entrepreneurship as an area of study for business students, and others as well. Entrepreneurship focuses on starting businesses and is useful for all those students who think they might want to own and run their own business some day. It is formally available as a minor.

A minor in entrepreneurship features business courses likely to be important to the creator of a new venture and/or the owner-operator of a growing business or family business. The minor includes exposure to entrepreneurs and entrepreneurship, creation of a new business concept, and formulation of a business plan that can serve as a springboard for a new venture.

Business Administration

Students who elect to major in the business administration curriculum acquire a comprehensive understanding of business as a whole. Through exposure to all functional areas in business, students are afforded the opportunity to develop broad skills and knowledge. The business administration degree prepares students for a wide variety of career opportunities in business and government.

In addition to university, college and departmental requirements cited previously, requirements for business administration majors include:

Core Requirements	Hrs.
1. Accounting/Finance.....	6
ACCT 2110, FIN 4XXX (choice of 4000-level finance course)	
2. Management/Decision sciences	12
MGT 3110, 4340, 4410, DSCI 4240	
3. Marketing	3
MKT 4430	
5. Restricted electives	9
Chosen in consultation with adviser.	

A complete curriculum sheet is available from the College of Business Academic Advising Office.

Decision Sciences

The decision sciences curriculum is designed to serve students with a variety of majors. A minor in decision sciences is available for students wishing to augment their major with quantitative and computer-based decision-making tools. Decision sciences courses emphasize applications to operations management.

Decision Sciences (DSCI)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

3210 [OM 3210]. Production and Operations Management. 3. An introductory course in production and operations management. Typical topics include operations strategy, quality management, facilities location, facilities layout, forecasting, inventory management, production planning, scheduling and project management. *Prerequisites:* IMGT 2400 or equivalent, MATH 2355 or equivalent, STAT 2010 or equivalent and advanced business standing.

4240. Computer Applications in Decision Sciences. 3. A study of decision science topics such as mathematical programming, Monte Carlo simulation, forecasting, project management and decision theory. The applications of computer techniques is emphasized. *Prerequisites:* IMGT 2400 or equivalent, DSCI 3210, STAT 2010 or equivalent and advanced business standing.

4250. Revenue Management. 3. Examines the tools used by many industries in the service sector to maximize revenue, including forecasting demand, overbooking customers, group decision making, how to allocate fixed assets, and control of the overall network. *Prerequisites:* DSCI 3210, advanced business standing.

4260. Project Management. 3. Examines the coordination project management activities. This includes the initiation, planning, implementation, control and evaluation of projects. *Prerequisites:* (DSCI 3210 and advanced business standing), or ES 1060 and junior standing.

4280. Supply Chain Management. 3. Examines the coordination of material flows and information through networks of suppliers, producers, warehouses, and customers that are linked by transportation modes. *Prerequisites:* DSCI 3210, advanced business standing.

4900 [OM 4900]. Problems in Decision Sciences. 1-4 (Max. 4). Studies, on an individual basis, any decision science topic not included in currently offered courses. *Prerequisites:* DSCI 3210, advanced business standing, senior standing and written consent of instructor.

4910 [OM 4910]. Selected Topics in Decision Sciences. 3. Study of specific decision science topic which is printed in the class schedule. *Prerequisites:* DSCI 3210, advanced business standing and senior standing.

Management

Successful management requires the effective use of an organization's resources. Planning, organizing, leading, measuring, and controlling what goes on in the organization are critical management jobs. To do them successfully, managers need understanding/skills in dealing with behavior and leadership at work, changing organizations, supervising others, designing human resource systems, promoting innovation, managing risk and information, negotiating, and decision making.

The curriculum leading to a degree in management is designed to provide the perspectives and tools necessary to help a motivated student move into a career in management.

	<i>Hrs.</i>
1. Management core.....	18
MGT 3110, 4410, 4420, 4425, 4430, 4460	
2. Management specialization.....	15
MGT 4340, 4440, 4445, 4466, 4470, 4510, 4560, 4580, 4600, 4910	
DSCI 4240, 4250, 4260, 4280	

Management (MGT)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1040 [2010, BADM 1040]. Legal Environment of Business. 3. Provides a broad overview of business-related legal topics. Students are familiarized with courts and alternative dispute resolution, constitutional law, torts, contracts, intellectual law, criminal law, and cyber law. *Prerequisites:* none.

2000 [BADM 2005]. Introduction to Business. 3. Designed to provide an overview of today's business system and how it works. Significant business activities are covered including: accounting, management, marketing, production, finance, decision making, economic markets, and world business. Recommended for those who might have an interest in business, but no real background. *Prerequisite:* freshman or sophomore standing.

2600 [BADM 2600]. Internship in Business. 1-4. Provides students with practical business knowledge and a perceptual basis for later coursework. Students work as interns in operating organizations. *Prerequisites:* COB Majors only and written consent of instructor.

3110 [BADM 3210]. Business Ethics. 3. Studies the cognitive, social, behavioral, and corporate processes affecting individual, group, and organizational judgments in morally questionable situations. Through analysis students understand what factors give rise to and influence ethical issues and how organization values precipitate ethical behavior among employees. *Prerequisites:* sophomore standing.

3210. Management and Organization. 3. An introduction to the theory and practice of management with emphasis on individual and small group behavior, design and structure of organizations, relationship between the organization and its environment and statistical and quantitative skills used in examination of management processes. Also covers interpersonal communications, ethics and international management.

Prerequisite: junior standing.

3340 [BADM 3000]. Real Estate Law. 3. Covers all major areas of real estate law, including the nature of real property, types of ownership, real estate contracts, title and insurance, financing, landlord and tenant, land use, environmental law and regulation. An understanding of real estate law is important in both the personal and professional lives of students. *Prerequisite:* Advanced business standing.

4340 [BADM 4340]. Law for Managers. 3. Provides an overview of laws and legal issues associated with managing a business, incorporating aspects of sustainable business practices. Topics include agency and employment, business organizations, including securities laws and corporate governance standards, government regulation of businesses, including environmental/sustainability regulations, and an introduction to international law and global economy. *Prerequisite:* MGT 1040 or equivalent.

4350 [BADM 4350]. Commercial Law. 3. A study of the basic principles of commercial law, including property, sales, negotiable instruments, secured transactions, creditors' rights and bankruptcy. *Prerequisites:* MGT 1040 or equivalent.

4410. Human Resources Management. 3. A study of the formal systems used to manage people at work. Emphasis is on concepts and procedures of EEO, diversity, job analysis, job evaluation, wage and salary administration, performance evaluation, safety, employee services and fringe benefits. *Prerequisites:* MGT 3210 and advanced business standing.

4420. Organizational Behavior and Leadership. 3. An interdisciplinary study of individual, group, and organizational processes that affect employee behavior at work. Prepares students for various managerial roles by synthesizing successful leadership practices in both domestic and international settings and by examining critical areas such as individual differences, organizational politics and culture. *Prerequisites:* MGT 3210 and advanced business standing.

4425. Supervision. 3. Focuses on interactions with direct report employees. Influence, work maturity, integrity, work standards, communication skills, team management, doing performance appraisal, managing customer service, training, and interviewing are among the supervisory topics. *Prerequisites:* MGT 3210, MGT 4420 and advanced business standing.

4430. Organization Design and Change. 3. Examines organizations, what they are, how they operate and are structured and how they can be changed. Focus is on macro managerial issues in the design and change of work organizations. *Prerequisites:* MGT 3210 and advanced business standing.

4440. Managing Innovation and Problem Solving. 3. Focuses on individual creativity and the resulting issues of intellectual property in organizations. Further considers making decisions and solving problems in modern organizations. Examines individual, group, and organizational influences and decisions. Topics include problem solving models, human information processing, creativity, leader decision style, managing decision teams. *Prerequisites:* MGT 3210 and advanced business standing.

4445. Managing Risk and Knowledge. 3. Focuses on the assessment and mitigation of property, liability, human resources, and income risks. Knowledge management explores strategies for profiting from technology assets and technological innovation. Includes the role of strategy, core competencies, product development, strategic partnership, and more. *Prerequisites:* MGT 3210 and advanced business standing.

4455. Managing Information Systems. 3. Includes systems analysis focusing on managing information systems projects. Includes working with information and databases. Business process engineering, reengineering, etc., finding software to meet management needs, outsourcing decisions and systems requirements. *Prerequisite:* IMGT 2400.

4465. Managerial Tools. 3. Supply commonly used tools for managers, including those for controlling operations – budgeting, financial forecasting and analysis using ratios, risk assessment and control, management audits, monitoring, clan control, and employee discipline systems. Planning tools include strategic and operational plans, goals, MBO, succession, disaster, contingency and scenario planning. *Prerequisites:* MGT 3210, DSCI 3210, and advanced business standing.

4470. Managerial Negotiation and Conflict Resolution. 3. Focuses on all aspects of formal managerial negotiation including dealings with suppliers, buyers, unions and etc. Also examined are the theory and practice of interpersonal negotiation. Conflict resolution is approached by identifying types and sources of conflict, organizational parameters of conflict, as well as resolution skills and behavior. *Prerequisites:* MGT 3210 and advanced business standing.

4500 [BADM 4500]. Employee to Entrepreneur. 3. Investigates considerations relating to leaving current employment, ethical dilemmas, skills needed to launch a new business, importance of cash flow and financing start-up, personal rewards and costs of entrepreneurship, and an overview of business plan context. *Prerequisite:* Sophomore standing.

4510 [BADM 4510]. New Entrepreneurial Venture. 3. Focus is on creating a successful business concept and determining its feasibility in the context of a rapidly changing global business environment. Students research, analyze and present a new business concept, which may evolve into a comprehensive business plan. *Prerequisites:* MGT 3210, ACCT 1010, junior standing.

4530 [BADM 4620]. Business Plan Development. 3. Explores and evaluates various intrapreneurial and entrepreneurial opportunities, including business plans. Students demonstrate how to research, analyze, and present new business ventures. Students will analyze a business opportunity and make a presentation to potential investors. *Prerequisite:* MGT 4510, 4560 and junior standing.

4550. Family Business and Corporate Venturing. 3. Investigates the organizational life cycle using a dual focus of family business and new ventures within established organizations. Topics include start-up considerations, organizational form, cash flow and financing, family dynamics, and identifying appropriate ventures for enhanced organizational growth. Ownership succession and exit strategies are also discussed. *Prerequisites:* advanced business standing and junior standing.

4560. Entrepreneurial Accounting and Finance. 3. Expand business knowledge by focusing attention on accounting and finance concerns that are vital to new ventures. Focuses on issues that must be addressed to assist these businesses in meeting their objectives of growth, preparation for a public offering, and exit strategies. *Prerequisites:* ACCT 1010, FIN 3250, MGT 3210.

4600. Advanced Internship in Business. 1-4. Provides students with practical business knowledge, policy, procedure, and decision making. Students work as interns in operating organizations. *Prerequisites:* MKT 3210, MGT 3210, FIN 3250, ACCT 1020, Advanced Business standing, written consent of instructor.

4800. Business Strategy and Policy. 3. A capstone course designed to integrate prior courses into a general manager's overall organization perspective. Coverage will emphasize strategic management models which provide frameworks that assist in this task and integrate those internal organization factors with the firm's environment. *Prerequisites:* ACCT 1010, 1020, MGT 1040, DSCI 3210, FIN 3250, MGT 3210, MKT 3210, STAT 2010, advanced business standing, and senior standing.

4900. Problems in Management. 1-4 (Max. 4). Studies, on an individual basis, any phase of management not included in the organized course. Written report required. *Prerequisites:* senior standing, advanced business standing, and written consent of instructor.

4910. Selected Topics in Management. 3 (Max. 6 seniors; M.S. and Ph.D. 9). A course for advanced students treating contemporary problems in management and administration. Specific area(s) to be considered in a given semester will be printed in the class schedule. *Prerequisites:* junior standing and other courses, as appropriate, for specific area/topic being covered. Obtain permission and specific listing of prerequisites for enrollment from the College of Business Academic Advising Office before registering.

Marketing

Marketing is a societal process and a set of organizational functions for creating, communicating, and delivering value to customers and for managing relationships in ways to benefit local and global stakeholders. Marketing majors are employed in a wide variety of industries and governmental agencies where understanding and managing customer relationships are critical. Students find jobs in market research, advertising, public relations, professional selling, non-profit marketing, product management, retailing, and brand management.

Marketing courses are designed so that students gain an understanding of how to gather, manage, and use information; how to analyze customers; and how to develop marketing strategy and design a marketing mix. At the same time, students gain skills in ethical decision-making, developing creative solutions to solve problems, communicating effectively, and working in teams. They also learn how to form intelligent judgments and opinions relating to economic, social, and environmental factors which vitally affect every day living for both present and future generations.

Hrs.

- 1. **MKT 4210, 4230, 4240, 4520, 4540, 4910, 4450**21
- 2. **Restricted Business Electives**..... 9
Must be COB courses selected in consultation with adviser.
- 3. **Elective credit in any area selected in consultation with adviser** 3

Marketing (MKT)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

3210. Introduction to Marketing. 3. An investigation of the marketing discipline with emphasis on vocabulary; principles; functional interrelationships; marketing strategies, practices and problems in national and international environments. *Prerequisite:* junior standing.

4210. Sales Management and Professional Selling. 3. Concerns the process of professional selling; planning and presentation; approach; interview and closing; and analysis of the management function of administering to an operating sales force. *Prerequisites:* MKT 4240, MKT 4520, MGT 3210, advanced business standing.

4230. Integrated Marketing Communication. 3. Introduction to integrated marketing communication, the coordination of an organization's advertising and promotional efforts. Emphasis on how marketing communication is used by organizations to further their marketing objectives. Among the tools available to the integration process are advertising, sales promotion, personal selling, sponsorship marketing, and public relations. *Prerequisites:* MKT 3210, 4240, advanced business standing.

4240. Consumer Behavior. 3. A study of the dimensions of the consumer market and decision-making processes of consumers through analyzing economic, personal, social and situational influences on the consumer market and on buying behavior. *Prerequisites:* MKT 3210, STAT 2010 and advanced business standing.

4430. Marketing Management. 3. Analysis of policy-making and operating decisions of the marketing manager and the tools available to aid in solving marketing problems. *Prerequisites:* MKT 3210, MGT 3210, STAT 2010.

4450. Advanced Marketing Management. 3. Capstone course for marketing majors and minors designed to integrate prior marketing courses. Primary focus is on utilizing marketing concepts and tools in a strategic marketing decision-making context. *Prerequisites:* advanced business standing, senior class standing, completion of 12 credit hours of marketing beyond MKT 3210.

4520. Marketing Research and Analysis. 3. Investigation of the systematic procedures and tools of research available to the marketing researcher, including a survey of contemporary practices. *Prerequisites:* MKT 3210, STAT 2010 and advanced business standing.

4540. International Marketing. 3. [G1, W3♦(none)] Approaches the topic of international marketing from a managerial perspective. Exposure to world environmental characteristics and interdependencies, as well as objectives, strategies and tactics of marketing goods and services to various countries and cultures. Cross listed with INST 4540. *Prerequisite:* MKT 3210.

4590. Sustainable Business Practices. 3. A close look at what is happening in business practice today through the 'lens' of sustainability. Business models and systems will be discussed and a framework proposed for assessing the ways in which principles of sustainability may be embedded within corporate strategy. *Prerequisites:* MKT 3210 and advanced business standing.

4610. Marketing Ethics. 3. Examines ethics and social responsibility in marketing. With some grounding in moral reasoning, students explore application of ethical frameworks to various aspects of marketing, including marketing research, target market selection, and marketing mix decisions. Integrative models for incorporating ethics and social responsibility into marketing decision making are applied. *Prerequisite:* MKT 3210.

4900 Problems in Marketing. 1-4 (Max. 4). Studies, on an individual basis, any phase of marketing not included in the organized courses. A written report is required. *Prerequisites:* advanced marketing courses as appropriate, advanced business standing; requires written consent of instructor.

4910. Selected Topics in Marketing. 3. A course for advanced students treating contemporary problems in marketing related areas. Specific area(s) to be considered in a given semester will be printed in class schedule. *Prerequisites:* junior standing and other courses, as appropriate, for specific area/topic being covered. Obtain permission and specific listing of prerequisites for enrollment from the College of Business Academic Advising Office before registering.

The College of Education prepares teachers, counselors, administrators and other service personnel for positions in public education in Wyoming, throughout the nation, and the world. The teacher education program incorporates content area courses from the various colleges on campus with experiences in educational methodology. Programs are designed to provide students with a maximum amount of experience in the classroom.

Graduates of the College of Education are prepared to deal with youth growing up in a rapidly changing world. Programs are experiential, collaborative, outcomes based, and technologically supported. Emphasis is placed on professional ethics, a commitment to life-long learning, and respect for all individuals in our culturally diverse society.

Programs of Study Undergraduate Degrees

Bachelor of Science

- Agricultural education
- Technical education (UW/CC only)

Bachelor of Arts

- Elementary education
- Secondary education

Graduate Degrees

- Master of Science
- Master of Arts
- Doctor of Philosophy
- Doctor of Education

Accreditation

The College of Education, a member of the American Association of Colleges of Teacher Education, is accredited by the National Council for Accreditation of Teacher Education. The Wyoming Professional Teaching Standards Board and the North Central Association of Colleges and Schools approve the college as an accredited teacher-preparing institution.

Organization of the College

The College of Education includes undergraduate teacher education and graduate studies in education. Departments offering undergraduate and graduate programs in the college include Adult Learning and Technology, Counselor Education, Educational Leadership, Educational Studies, Elementary/Early Childhood Education, Secondary Education, and Special Education.

Undergraduate and graduate education are supported by several units. The Office of Teacher Education, McWhinnie Hall room 100, coordinates activities dealing with undergraduate academic advising, field experiences, and certification.

The College of Education, College of Arts and Sciences, Wyoming community colleges, many Wyoming districts, and the State Department of Education are part of the Wyoming School-University Partnership, which grounds collaborative efforts across the state related to K-12 preservice and inservice education.

The Laboratory School, an Albany County School District entity, serves the college, the university, the school district, and the state as an educational center for research, development, instructional advancement, and in-service education. The school enrolls students in pre-school through ninth grade.

Computer laboratories in the college feature a wide range of capabilities including Internet access. The laboratory equipment is frequently updated to serve the needs of students, faculty and staff.

The Learning Resource Center is a branch of the university library system. Educational materials are available to serve the needs of K-12 students, university students, university faculty and public school faculty in Wyoming.

Academic Advising

Students are assigned an academic adviser who will assist in planning a program combining University Studies requirements, core content requirements, and professional education courses. Students are expected to consult with their adviser regularly. The Office of Teacher Education coordinates advising and provides students and faculty with assistance in areas related to academic advising.

Student Responsibility

College of Education students are responsible for knowing and meeting graduation requirements. Students are expected to maintain a 2.75 UW Total Institution grade point average to enter Phase II and III of the Wyoming Teacher Education Program and continue in the professional education sequence and to graduate from the teacher education program. Prior to enrolling in professional education courses, students are expected to have met the specific program and course prerequisites as listed in this publication. Students are expected to make reasonable academic progress toward completion of a degree. Professional education courses taken prior to the last 10 years will not be accepted in a degree and/or teacher certification program.

Courses Taken for S/U Credit

Courses taken to satisfy professional education requirements and major content requirements must be taken for a conventional grade (A-F) unless offered for S/U grading only.

Wyoming Teacher Education Program

The Wyoming Teacher Education Program consists of increasingly demanding phases of professional preparation. Competencies based on professional standards, including those mandated by the Wyoming Professional Teaching Standards Board (PTSB), are addressed developmentally. A teacher candidate graduating from this program will have mastered competencies required by the PTSB and the education profession.

Preprofessional: students concentrate on the University Studies Program requirements. EDST 2450, Human Lifespan Development, must be completed prior to moving into Phase I.

Phase I: Sophomore students are introduced to teaching and learning through EDST 2480, Diversity and the Politics of Schooling. This course includes a field experience in a public school setting.

Phase II: A junior-level experience extends student competence through EDST 3000, Teacher as Practitioner. The practicum experience is in a public school guided by practicing K-12 faculty.

Phase IIIa/b: A two-semester sequence in the final year consists of fieldwork and pedagogy course work in the first semester. The second semester consists of a 16-week, full-time classroom experience. Field experiences are completed in Partner Schools.

Partner Schools are regional Wyoming district settings with collaborative agreements for concentrated field placements. These partnerships are focused on interactive mentoring by university and K-12 faculty and emphasize applied pedagogy.

Degree Program Curricula

The following curricula summarize the programs offered by the College of Education. All students complete the University Studies courses, some of which may be counted towards the major. Courses may count no more than twice in College of Education degree programs. Students complete major courses as well as professional education courses. Additional requirements are:

- 2.75 UW Total Institution grade point average
- ITEC 2360, Teaching with Technology
- 2.50 grade point average in major courses
- A valid Wyoming substitute teaching certificate.

Further information on each program is available in:

Office of Teacher Education
McWhinnie Hall Room 100
Dept. 3374, 1000 E. University Ave.
Laramie, WY 82071
Ph. (307) 766-2230

Agricultural Education Curriculum

Professional Education

Requirements

EDST	2450	3
ITEC	2360	3
EDAG	3160	3
EDEX	2484	3
EDST	2480	4
EDST	3000	6
EDST	3550	2
EDSE	3278	3
EDSE	4278	3
EDSE	4500	15

Agricultural Education with Concurrent Major in Agricultural Business

This program consists of a minimum of 121 total hours. Minimum of 2.75 cumulative GPA and minimum of 2.50 content GPA required. This major will be advised in the College of Education, with a secondary adviser in the College of Agriculture. Refer to the College of Education for specific curriculum requirements.

Major Content

AGEC/ECON	1010	3
AGEC/ECON	1020	3
AGEC	2020	4
AGEC	3400	3
AGEC	4050	3
AGEC	4060	3
AGEC	4500	3
and		
6 hours of upper-division AGECE course work		
ECON	3020	3
AECL	1000	4
AECL	2010	4
ANSC	1010 or 2020	4
EDAG	3160	3
EDAG	3170	3
EDAG	3180	3
EDAG	4180	3
and		
3 hours upper-division AG/EDAG elective course work		

Agricultural Education with Concurrent Major in Agricultural Communications

This program consists of a minimum of 127 total hours. Minimum of 2.75 cumulative GPA and minimum of 2.50 content GPA required. This major will be advised in the College of Education, with a secondary adviser in the College of Agriculture. Refer to the College of Education for specific curriculum requirements.

Major Content

COJO	1040	3
COJO	2100	3
COJO	2150	3
COJO	2400	3
and		
15 hours of upper division (3000+) COJO course work (minimum)		
AECL	1000	4
AECL	2010	4
AGEC/ECON	1010	3
AGEC/ECON	1020	3
ANSC	1010	4
ANSC	2020 or	4
REWM	3020	3
REWM	2000	3
EDAG	3160	3
EDAG	3170	3
EDAG	3180	3
EDAG	4180	3
and		
6 hours of upper division (3000+) Agriculture course work (minimum)		

Agricultural Education with Concurrent Major in Agroecology

This program consists of a minimum of 127 total hours. Minimum of 2.75 cumulative GPA and minimum of 2.50 content GPA required. This major will be advised in the College of Education, with a secondary adviser in the College of Agriculture. Refer to the College of Education for specific curriculum requirements.

Major Content

AECL	1000	4
ENTO	1000 or	3
ENTO	1001	4
ANSC	1010	4
AECL	2010	4
LIFE	2023	4
AECL	3030	3
PLNT	3220 or	3
PLNT	4070	4
AECL	4140	4
AECL	4990	3
AECL	4930	3

Supporting Sciences, Agriculture and Ag Ed

(29 hours minimum)

CHEM	1000	4
LIFE	1010	4
AGEC/ECON	1010 or	3
AGEC/ECON	1020	3
EDAG	3160	3
EDAG	3170	3
EDAG	3180	3
REWM	2000	3
EDAG	4180	3
EDAG	4220	3

Agricultural Education with Concurrent Major in Animal and Veterinary Sciences

This program consists of a minimum of 128 total hours. Minimum of 2.75 cumulative GPA and minimum of 2.50 content GPA required. This major will be advised in the College of Education, with a secondary adviser in the College of Agriculture. Refer to the College of Education for specific curriculum requirements.

Major Content

ANSC	1000	1	
ANSC	1010	4	
ANSC	2010	3	
ANSC	2020 or	4	
ANSC	4100	3	
ANSC	3010	4	
ANSC	3100	3	
ANSC	4120	3	
ANSC	4540	3	
ANSC	3150 or	3	
ANSC	4220 or	3	
ANSC	4230 or	3	
ANSC	4240	3	
PATB	4110	3	
FDSC	2040	3	
LIFE	1010	4	
LIFE	2022	4	
CHEM	1000	4	
AECL	1000	4	
AGEC/ECON	1010 or	3	
AGEC/ECON	1020	3	
EDAG	3160	3	
EDAG	3170	3	
EDAG	3180	3	
EDAG	4180	3	
EDAG	4220	3	
and			
Upper-division ANSC, PATB, or FDSC			
Elective			3

Agricultural Education with Concurrent Major in Rangeland Ecology and Watershed Management

This program consists of a minimum of 127 total hours. Minimum of 2.75 cumulative GPA and minimum of 2.50 content GPA required. This major will be advised in the College of Education, with a secondary adviser in the College of Agriculture. Refer to the College of Education for specific curriculum requirements.

Major Content

REWM	2000	3
REWM	2500	2
REWM	3020	3
REWM	3500	3
REWM	4300	3
REWM	4330	3
REWM	4700	3
REWM	4850	3
SOIL	2010	4
SOIL	4120	4
CHEM	1000	4
AGEC	1020	3
LIFE	1010	4

LIFE	2022 or 2023 or MOLB 2021	4
LIFE	3400	3
REWM	4000 or	3
REWM	3100 or	3
REWM	4103 or	3
REWM	4150	3
EDAG	3160	3
EDAG	3170	3
EDAG	3180	3
EDAG	4180	3
RNEW	2345	3

Art Education with Concurrent Major in Art Curriculum

The art education program consists of a minimum of 122 total hours and prepares students for K-12 certification. Transfer students are required to take at least 26 hours of upper-division art course work from the University of Wyoming. Majors must earn a grade of C or better in all content courses. A minimum GPA of 2.50 in major content courses is required.

Professional Education

Requirements

EDST	2450	3
EDST	2480	4
EDEX	2484	3
ITEC	2360	3
EDST	3000	6
EDST	3550	2
EDSE	3272	3
EDSE	4272	3
EDSE	4500	8
EDEL	4500	8

Major Content

ART	1005	3
ART	1110	3
ART	1115	1
ART	1120	3
ART	1130	3
ART	2010	3
ART	2020	3
ART	2305	1

The above major content courses must be completed before EDSE 4272. In addition to these courses, students must also complete 15 hours of art studio core, 3 hours of art history electives, 10 hours of upper division art courses, and 3 hours of interrelated arts electives.

Elementary Education Curriculum

Professional Education

Requirements

EDST	2450	3
EDST	2480	4
EDEX	2484	3
ITEC	2360	3
EDST	3000	6
EDST	3550	2
EDEL	4109	5
EDEL	4309	5
EDEL	4409	5
EDEL	4500	15

Major Content

LIFE	1020	4
GEOL/ASTR	1070	4
CHEM/PHYS	1090	4
EDEL	1430	1
EDEL	1440	1
EDEL	1450	1
EDEL	1410	1
EDEL	1420	1
MATH	1100	3
MATH	1105	3
MATH	2110	3
EDEL	2280	3
EDEC	4320	3
HLED	2006	1
GEOG	1010 or	3
GEOG	1020	3

The above major content courses must be taken prior to enrollment in EDEL 4109, 4309, 4409. EDST 3550 must also be completed before EDEL 4109, 4309, 4409.

The following areas must also be represented in the program. Courses may also fulfill University Studies requirements or be part of the area of concentration. No course may be double-counted within these four areas. Courses for speech and acting and American diversity must be selected from lists of designated courses, which are available from the Office of Teacher Education, or the college web site.

American diversity	3
EDEL 3170	3
Music	3
Speech and acting	3

Areas of Concentration

Elementary education majors must take a minimum of 18 semester hours in a specific area of concentration. The following approved areas provide specialization in:

1. Creative arts
2. International Education Studies or American Cultural Diversity
3. Environmental studies
4. Interdisciplinary early childhood
5. Individual and society (at UW/Casper College Center only)

A list of required courses and specific requirements for each area of concentration may be obtained from The Office of Teacher Education, or the college web site.

English Education with Concurrent Major in English Curriculum

This program consists of a minimum of 120 total hours. All English courses must be passed with a grade of C or better. A minimum GPA of 2.5 in major content courses is required.

Professional Education

Requirements

EDST	2450	3
EDST	2480	4
EDEX	2484	3
ITEC	2360	3
EDST	3000	6
EDST	3550	2
EDSE	3270	3
EDSE	4270	3
EDSE	4500	15

Major Content

ENGL	2425, 2430 and 2435	9
ENGL	4110, 4120 or 4170	3
Two 4000-level courses in pre-20th century literature in two different periods..... 6 (choices available from the Office of Teacher Education or the college web site)		
ENGL	4750 or 4770	3
ENGL	4990	3
EDCI	4120	3
Two Emerging Fields & Approaches courses 6 (choices available from the Office of Teacher Education or the college web site)		
Foreign Language (single language); ASL does not fulfill this requirement..... 12		
English elective 3		

Mathematics Education with Concurrent Major in Mathematics Curriculum

Total hours required for the mathematics education curriculum is 120.

Professional Education

Requirements

EDST	2480	4
EDST	2450	3
EDEX	2484	3
ITEC	2360	3
EDST	3000	6
EDST	3550	2
EDSE	3271	3
EDSE	4271	3
EDSE	4500	15

Major Content

It is necessary to complete a minimum of 47 hours in math and computer science. Work must include 21 credit hours of upper-division mathematics. The grade in each course of this 47-hour requirement must be C or better. A minimum GPA of 2.5 in major content courses is required.

COSC	1010	4
MATH	2200	4
MATH	2205	4
MATH	2210	4
MATH	2250	3
MATH	2800	2
MATH	3000 or 3200	3
MATH	3500 or 3550	3
MATH	4000	3
MATH	4150	3
MATH	4300	3
MATH	4600	3
MATH (MATH 2310 or any 3000+ level MATH course except 4800) electives..... 6		
Statistics elective or MATH 4250 3		

Modern Languages Education

Secondary education programs are offered in French, German, and Spanish. Total minimum hours required for the modern languages education curriculum is 123.

Modern Language Secondary Education programs require that all candidates score at the *Advanced Low* level or higher on the American Council of Teachers of Foreign Language Oral Proficiency Interview (OPI), as well as on the Writing Proficiency Test (WPT) in their language major/the language they intend to teach. In order to be admitted to the Methods II course, students must demonstrate having attained a rating of at least the *Advanced Low* proficiency level on the OPI and the WPT. Post-baccalaureate teacher certification program students must score at these levels prior to admission to Modern Language Secondary Education programs. Given these requirements, it is important that students take advantage of study abroad experiences that will assist them in reaching high levels of second language proficiency. For information on UW study abroad opportunities, contact the International Programs office at 766-3677, or consult their web site at www.uwyo.edu/intprograms.

Professional Education

Requirements

EDST	2450	3
EDST	2480	4
EDEX	2484	3
ITEC	2360	3
EDST	3000	6
EDST	3550	2
EDSE	3276	3
EDSE	4276	3
EDSE	4500	15

With Concurrent Major in French

The major consists of at least 31 hours beyond FREN 2030. Students who have taken French in high school should consult the Department of Modern and Classical Languages about proper placement. FREN 1010, 1020, and 2030 do not count toward the major; however, these courses may need to be taken as prerequisites.

French Major Content

FREN	2040	3
FREN	2130	3
FREN	2140	3
FREN	3005	1
FREN	3050	3
FREN	3060	3
FREN	3105	3
FREN	3110	3
FREN	4100	3
FREN	4110	3
FREN	4120 or 4130 or 4140	3
<i>Other Required Courses</i>		
COJO	1010 or THEA 1100	3
ENGL/LANG	4750	3
ENGL/LANG	4770 or 4785	3

EDCI	4250	3	
EDCI	4350	3	
and			
French (FREN) or courses related to the history, art and political science of the francophone world, in consultation with your academic advisor. [In addition to other required course work.] For those who wish to complete the ESL Endorsement, six of these hours can be earned by taking EDCI 5430 and EDCI 5440, or through study abroad in a French-speaking country			12

With Concurrent Major in German

The major consists of at least 30 hours beyond GERM 2030. Students who have taken German in high school should consult the Department of Modern and Classical Languages about proper placement. GERM 1010, 1020, and 2030 do not count toward the major; however, these courses may need to be taken as prerequisites.

GERM	2040	3
GERM	2140	3
GERM	3006	3
GERM	3050	3
GERM	3060	3
GERM	4070	3
GERM	4100	3
GERM	4110	3
GERM	4145 or 4180	3
GERM	4265	3

Other Required Courses

COJO	1010 or THEA 1100	3
ENGL/LANG	4750	3
ENGL/LANG	4770 or 4785	3
EDCI	4250	3
EDCI	4350	3
and		

German (GERM) or courses related to the history, art and political science of the German-speaking world, in consultation with your academic advisor. [In addition to other required course work.] For those who wish to complete the ESL Endorsement, six of these hours can be earned by taking EDCI 5430 and EDCI 5440, or through study abroad in a German-speaking country

With Concurrent Major in Spanish

The major consists of at least 33 hours beyond SPAN 2030. Students who have taken Spanish in high school should consult the Department of Modern and Classical Languages about proper placement. SPAN 1010, 1020, and 2030 do not count toward the major; however, these courses may need to be taken as prerequisites.

SPAN	2040	3
SPAN	2140	3
SPAN	3050	3
SPAN	3060	3
SPAN	3080	3
SPAN	3100	3
SPAN	3120	3
SPAN	3200	3
SPAN	4070	3
SPAN	4080	3

SPAN	4090	3	
<i>Other Required Courses</i>			
COJO	1010 or THEA 1100	3	
ENGL/LANG	4750	3	
ENGL/LANG	4770 or 4785	3	
EDCI	4250	3	
EDCI	4350	3	
and			
Spanish (SPAN) or Chicano Studies (CHST) or courses related to the history, art and political science of the Spanish-speaking world, in consultation with your academic advisor, in addition to other required course work. For those who wish to complete the ESL Endorsement, six of these hours can be earned by taking EDCI 5430 and EDCI 5440, or through study abroad in a Spanish-speaking country			12

Science Education Curriculum

Concurrent majors in Science Education are offered in Biology, Chemistry, Earth System Science, and Geology.

A grade of C or better must be earned in each course included in the major content. A minimum GPA of 2.5 in major content courses is required.

Professional Education

Requirements

EDST	2450	3
EDST	2480	4
EDEX	2484	3
ITEC	2360	3
EDST	3000	6
EDST	3550	2
EDSE	3275	3
EDSE	4275	3
EDSE	4500	15

Biological Science Education with Concurrent Major in Biology

In addition to the professional education requirements, a minimum of 62 semester hours, including the major content courses (27 hours), biology electives (15 hours) and required electives (20 hours minimum).

Science Electives

At least one course from each of the following areas is required: chemistry, physics, environmental science, earth and space sciences.

Total minimum program hours: 121

Major Content

Required Courses

LIFE	1010	4
LIFE	2022	4
LIFE	2023	4
MICR/MOLB	2021	4
LIFE	3050 or 3500	4
LIFE	3400	4

Elective Courses

15 hours in the Biological Sciences. Electives may be from one or more of these areas of emphasis: Microbial Emphasis; Plant and Fungal Emphasis; Animal Emphasis; Ecology Emphasis; Genetics and Evolution Emphasis (choices available from the Office of Teacher Education or the college web site). A minimum of 8 hours must be upper division.

Other Required Electives (20 hours minimum)

STAT	2050	4
CHEM	1000 or 1020	4
PHYS	1110	4
And one course from each of the following (12 hours minimum):		
Earth and Space Science		4
Environmental Science		4

Chemistry Education with Concurrent Major in Chemistry

In addition to the professional education requirements, a minimum of 51 semester hours, including the major content courses (42 hours), science electives (9 hours) are required.

Required Content Courses

CHEM	1020 or 1050	4
CHEM	1030 or 1060	4
CHEM	2230	4
CHEM	2420	4
CHEM	2440	4
CHEM	4110	3
CHEM	4230	4
CHEM	4507 or 3550	3
LIFE	1010	4
MOLB/MICR	2021	4
STAT	2050	4

Minimum 9 Additional Credits from:

LIFE	3400	3
LIFE	3050	4
LIFE	3500	3
LIFE	3600	4
MOLB	3610	4
MOLB	4100	3
MOLB	4105	1

Earth/Space Science Education with Concurrent Major in Earth System Science

In addition to the professional education requirements, a minimum of 71 semester hours, including the major content courses (46 hours), additional courses (16 hours), and elective courses (9 hours) are required.

Required Earth System Courses

LIFE	1010	4
CHEM	1020 or 1050	4
CHEM	1030 or 1060	4
PHYS	1310	4
ESS/GEOL	2000	4
LIFE	2022 or 2023	4
ESS/GEOL	3480	3
GEOL	3500 or 4777 or BOT 4780 or SOIL 4535	3-4

ESS/ATSC/BOT/GEOL	4001	4
BOT/GEOL/GEOG	4111 or	3
BOT/GEOL/GEOG	4140	3
GEOG	4200	4
ESS	4950	3
ESS	4970	2

And Additional Required Courses

STAT	2050	4
MATH	2200	4
MATH	2205	4
GEOL	3600 or 3650	4
Elective Courses		9

Science Electives

At least one course from each of the following areas is required: physics, biological sciences, environmental science, chemistry.

Earth/Space Science Education with Concurrent Major in Geology

In addition to the professional education requirements, a minimum of 63 semester hours, including the major content courses (30 hours), required electives (15 hours) and elective courses in one Emphasis Area (18 hours) are required.

Required Geology Courses

ASTR	1050	4
ATSC	2000	4
GEOG	4040	3
GEOL	1100	4
GEOL	2000	4
GEOL	2100	4
GEOL	2080 or 3080	4
GEOL	4820	3

Required Electives

STAT	2050	4
CHEM	1000 or 1020	4
LIFE	2002	3
PHYS	1050	4

Elective Courses: 18 hours (minimum)

At least one course from the Environmental Geology Emphasis and an additional 15 hours from one Emphasis Area.

Emphasis Areas:

- Environmental Geology
- General Geology
- Earth and Mineral Resources

Physics Education with Concurrent Major in Physics

In addition to the professional education requirements, a minimum of 63 semester hours, including the major content courses (32 hours), and science (16 hours), and mathematics (15 hours) courses are required.

Major Content

Required Courses

PHYS	1310	4
PHYS	1320	4
PHYS	2310	4

PHYS	2320	4
PHYS	4210	3
PHYS	4310	3
PHYS	4410	3
PHYS	4510	3
PHYS	2150 or 3100 or 4050 or 4150 or 4160	2-4
Upper-division PHYS elective		3

Required Science Courses

LIFE	1020	4
ASTR	1050	4
CHEM	1020	4
COSC	1030	4

Required Mathematics Courses

MATH	2200	4
MATH	2205	4
MATH	2210	4
MATH	2310	3

Social Studies Education

Professional Education

Requirements

EDST	2450	3
EDST	2480	4
EDEX	2484	3
ITEC	2360	3
EDST	3000	6
EDST	3550	2
EDSE	3273	3
EDSE	4273	3
EDSE	4500	15

Major Content

Concurrent majors in social studies education are offered in Geography (128 minimum credits total), History (128 minimum credits total), and Political Science (128 minimum credits total).

Majors must maintain a G.P.A. of 2.50 in major content courses and earn a grade of C or better in all content classes.

Social Studies Education with Concurrent Major in Geography

Geography Requirements: 41 hours

GEOG	1000	3
GEOG	1010	4
GEOG	1020	3
GEOG	2150	3
GEOG	4200	4

21 hours of Geography (GEOG) electives (15 hours minimum) must be upper division.

Additional Content Requirements: 33 hours (minimum); 18 hours (minimum) in HIST

Required:

HIST	1211	3
HIST	1221	3
History Electives		12

(9 hours must be upper-division) 6 hours in ECON, 6 hours in POLS, and an additional 3 hours in any area of the social sciences.

Social Studies Education with Concurrent Major in History

Major Content

HIST	1211	3
HIST	1221	3
HIST	1251	3
HIST	1320 or 1110 or 2370	3
HIST	1330 or 1120 or 2385	3
HIST	2290	3
HIST	3020 or 4055	3
HIST	4030	3
HIST	4492 or 4462 or 4463 or 4464 and	3
Upper-division history electives and		12
Single foreign language		8
Economics electives		6
Geography electives		6
Political Science electives		6
Psychology electives		3-6

Social Studies Education with Concurrent Major in Political Science

Political Science Requirements: 36 hours

POLS	1000	3
POLS	1200	3
POLS	2300 or 2310	3
POLS	2460	3
POLS	3100	3
POLS	4100	3
POLS	4110	3

Additional 15 hours (minimum) of POLS course work from this list including at least one Senior Seminar:

POLS	2000	3
POLS	2070	3
POLS	2200	3
POLS	3220	3
POLS	3270	3
POLS	3300	3
POLS	3500	3
POLS	3680	3
POLS	4051	3
POLS	4052	3
POLS	4090	3
POLS	4120	3
POLS	4230	3
POLS	4290	3
POLS	4300	3
POLS	4330	3
POLS	4400	3
POLS	4430	3
POLS	4530	3
POLS	4710	3
POLS	4810	3
POLS	4840	3
POLS	4850	3
POLS	4870	3
POLS	4890	3
POLS	4900	3
POLS	4910	3

Additional Content Requirements: 28 hours (minimum); 18 hours (minimum) in HIST:

Required:

HIST	1211	3
HIST	1221	3
History Electives and		12
GEOG	1010	4
GEOG	1000 or 1020	3
ECON/INST	1000	3

Department of Adult Learning and Technology

318 Education Building, 766-3247

FAX: (307) 766-3237

Web site: www.uwyo.edu/alt

Department Head: John Cochenour

Professors:

MICHAEL J. DAY, B.A. University of Maryland (European Division) 1973; B.A. 1976; M.Ed. Wayne State University 1975; Ph.D. University of Michigan 1981; Professor of Adult Education 1993, 1982.

Associate Professors:

JOHN COCHENOUR, B.S. Oklahoma State University 1967; M. Ed. University of Oklahoma 1984; M.L.S. 1984; Ph.D. 1990; Associate Professor of Instructional Technology 1997, 1991.

CLIFFORD HARBOUR, B.A. Rhode Island College 1978; J.D. Ohio Northern University 1981; M.A. Duke University 1987; Ed.D. North Carolina State University 2000; Associate Professor of Adult Education 2008.

Assistant Professors:

DORIS BOLLIGER, B.S. Park University 1991; M.A. Bowie State University 1995; Ed.D. University of West Florida 2002; Assistant Professor of Instructional Technology 2006.

CRAIG SHEPHERD, B.S. Brigham Young University 2002; Ph.D. University of Georgia 2008; Assistant Professor of Instructional Technology 2008.

QI SUN, B.A. Harbin Teacher College 1984; M.Ed. Beijing Normal University 1990; Ed.D. Northern Illinois University 2001; Assistant Professor of Adult Education 2002.

Associate Lecturer:

STEVEN AAGARD, B.S. University of Wyoming 1989; M.A. Washington State University 1991; Ph.D. University of Wyoming 2006; Associate Lecturer 2005.

The Program

The nationally recognized program offers the following graduate degrees in Education: Master of Art (MA), Master of Science (MS), Education Specialist (Ed.S), and Doctor of Education (Ed.D). The Master of Art includes a specialization in adult and post secondary education. The Master of Science includes a specialization in instructional technology. Each master's program requires 34 credit hours beyond the bachelor's degree and is available on campus, online and through a variety of distance delivery systems. The Ed.S. degree (36 hours beyond the master's degree) is suitable for individuals who desire preparation beyond the master's level and a second advanced degree but who do not wish to work toward a doctorate. A bachelor's and master's degree is required of all students to be admitted to an Ed.S. program. The Ed.D. is the terminal professional degree in education designed for students who desire to improve their professional practice as educators. The Ed.D. requires a minimum of 80-82 semester hours beyond the bachelor's degree, of which 36 hours must be taken in the student's chosen field. Candidates may, with the approval of the faculty, transfer up to 30 semester hours from previous course work.

Additional information may be found in the *Graduate Bulletin* (online at www.uwyo.edu/uwgrad/bulletin) or on the department's webpage.

Adult and Post-Secondary Education

The domain or field of adult education is vast and varied, extending from self-directed learning (educational activities initiated and largely conducted by the individual himself or herself) to more formal educational opportunities sponsored by institutions and agencies (such as adult basic education, higher education, enrichment, and professional development). Within the adult education graduate program at UW, this focus is generally narrowed to educational endeavors sponsored by institutions and agencies and specifically designed for adult participants. Areas of study include the following:

- adult development and learning theories;
- the social, historical, and global context of adult education;
- equity and access to continuing education opportunities for adults; and,
- the development and delivery of post secondary education (including distance education activities such as online courses).

Graduate study in adult education addresses the challenges faced by institutions and agencies in the design and delivery of post secondary education and the preparation of educators to meet these challenges. Graduates of the program are employed specifically as faculty and administrators in community colleges and universities, human resource developers, adult literacy educators, military training specialists, training coordinators for government and social service agencies (such as the Department of Family Services, the Department of Labor, Family Planning Agencies, and the Eppson Center for Seniors), museum educators, adult learning consultants, and, continuing professional educators in many fields including law, religion, nursing, and pK-12 teaching.

Adult Education (ADED)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Adult Education Inquiry. 2. [(none)↔I] Basic underpinnings of the field of adult education. Themes discussed include learning theories, learning styles, multiple ways of knowing, and issues surrounding access, opportunity, diversity, and schooling. While serving as an introduction to careers and theory in adult education, also addresses some practical higher education survival skills.

1008. Eastern Thought Western Practice. 2. [(none)↔I] Major concepts of Eastern thought from Confucius and Osho are explored, examined, to understand eastern ways of perceiving reality, knowledge, and values. Hands-on activities are employed to experience and practice the applications of the concepts. Students are challenged to critically think, analyze, and compare with their own, increase their consciousness of diversity.

4750 [EDUC 4750]. Perspective on Teaching. 1-3 (Max. 6). For undergraduate students selected to collaborate with UW faculty or professional staff in the delivery and sometimes the design of a university course, this course augments in-class experiences with an examination of basic learning and teaching principles. *Prerequisite:* 3.0 GPA.

Instructional Technology

The goal of the ITEC degree programs is based upon the definition of the term *instructional technology* itself: To prepare graduates to become key leaders in solving problems of human learning based upon sound educational principles. Program emphasis is placed not only on the hardware and software skills necessary for success in the field, but also upon accepted principles of theory, research and practice, philo-

sophical foundations, interpersonal skills, and decision-making capabilities that will be placed upon the instructional technology professional.

The rapidly changing field of instructional technology demands a flexible program that can meet the needs of professionals interested in teaching, training, and learning in a variety of educational settings. Graduates of the instructional technology program have secured employment in K-12 classrooms; school media and technology centers and schools district administrative offices; public, corporate, and governmental media, technology, and information centers and training agencies; college and university faculty and administrative positions; military training facilities; corporate design and development labs; corporate product support teams; and individually owned consulting firms.

ITEC program development is an iterative process to keep pace with this eclectic and evolving field and the requests of students for diversity in course offerings and delivery systems. Interested students are encouraged to contact the department for the most current information on program requirements and options.

Instructional Technology (ITEC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Visual Literacy for Life and Learning. 4. [(none)↔I, L] Engages students in the discussion and practice of communicating with visual resources. Students do not need to be artistic to succeed. Emphasis is placed on 1) using visuals for communication in formal and informal educational environments, and 2) the responsible use of visuals as discerning global citizens.

2360. Teaching with Technology. 1-3 (Max. 3). [(none)↔L] Introduction to effective utilization of computers and other instructional technologies for instruction; software/hardware selection; integrated, professional and instructional applications as applied to all areas and levels of P-12 education. *Prerequisites:* minimum 2.5 cumulative UW GPA and declared major in Education. (Offered fall, spring and summer)

4010 [4120]. Instructional Technology. 3. An introductory survey course in instructional technology. Covers psychological principles in communication theory, message design and instructional theory with emphasis on the application of technology toward achieving communications objectives. Includes hands-on experience with current presentation tools and techniques for a variety of instructional deliveries. Dual listed with ITEC 5010. *Prerequisite:* junior standing.

4220. Materials Production I. 2. The first in a series of laboratory experiences aimed at providing teachers, administrators and production specialists with skills in the design and production of instructional materials. Focuses on the basic processes (i.e. mounting, lettering, coloring, illustration, converting and duplicating). A materials fee will be assessed. May be used toward the practical and applied arts requirement. *Prerequisite:* ITEC 4120. (Offered based on sufficient demand and resources)

4340 [4400]. Integrating Computer-Based Technologies in Teaching: _____ 1-3 (Max. 6). Equips students with information, skills and insights necessary for successful integration of computer-based technologies into classroom teaching. Content includes modeling of techniques, teaching strategies and appropriate applications of computer-based technologies in specific content areas and consideration of computer-related issues facing educators. *Prerequisite:* ITEC 2360 or equivalent.

4360. Advanced Instructional Computing. 3. For graduate students and teachers interested in learning how to appropriately use microcomputers (CBE, CAI, CBI and CMI) in the classroom and as a tool in their disciplines. Methods of using microcomputers to improve learning, retention, motivation and higher order thinking skills are examined. Systems for classroom management and criteria for selection of hardware and software are covered. A variety of software will be evaluated and used in content specific areas. *Prerequisite:* graduate standing.

4740. Field Studies In _____ 1-5 (Max. 12). This course is offered only through extension services. It is broad and flexible and can be utilized in numerous situations to meet local needs. Credit in this course is not applicable toward advanced degrees. *Prerequisite:* junior standing. (Please note that any course offered by the College of Education with the number 4740 is not applicable toward advanced degrees)

4880. Individual Problems. 1-3 (Max. 9). A course providing flexible credit for seniors who are interested in investigating problems in instructional technology. *Prerequisites:* 12 hours of education and consent of instructor.

Library Science

Please contact the Department of Adult Learning and Technology (307) 766-3247 for information.

Library Science (LIBS)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2000. Libraries and Librarianship. 2. A study of the historical development of the library and its role as a social institution. Types of libraries and services, standards, current trends, professional training, and status and responsibility of the librarian are covered. It is beneficial to all who plan to do library work or who are working toward certification in library-media. (Offered based on sufficient demand and resources)

3010. Research from a Distance. 1. [(none)↔L] Students locate, evaluate, and synthesize free and fee-based information resources used in academic and work environments, with a special focus on assessing information remotely. Course assignments are customized to student's academic major and career goals. Students discuss ethical and legal issues surrounding information use. *Prerequisites:* ENGL 1010 or equivalent; junior standing.

3020. Managing and Navigating the World of Information. 3. [(none)↔L] Prepares students to be knowledgeable consumer of information in our global, high-tech society. Skills taught enable students to locate and manage information resources, preparing them for university level research and life after graduation. *Prerequisite:* WA.

4320. Selection of Instructional Materials. 3. A study of basic principles and practices in the selection of print and non-print materials for utilization in school and public libraries. Emphasis is given to the evaluation of materials in light of community needs and principles of intellectual freedom. Dual listed with LIBS 5320. *Prerequisite:* 20 hours of general education (liberal arts). (Offered based on sufficient demand and resources)

4340. Administration of the School Library-Media Center. 3. Deals with finance, housing, personnel, the collection, records and services of the school library media center. Instruction in the use of the library and publicity or educational interpretation concerning the library are also discussed. Dual listed with LIBS 5340. *Prerequisites:* LIBS 4320, 4380, major in educational administration. (Offered based on sufficient demand and resources)

4360. Reference and Bibliography. 3. An introduction to the basic materials used in reference and information services. The philosophy of reference services is presented with particular attention to the needs of schools, community colleges and public libraries. Dual listed with LIBS 5360. *Prerequisite:* 20 hours of general education (liberal arts). (Offered based on sufficient demand and resources)

4380. Cataloging and Classification. 3. Introduction to the theories and practices of cataloging and classification. Emphasis is on

the Dewey Decimal system; subject cataloging from the Sears headings; descriptive cataloging of monographs, serials, and non-print materials; filing rules. Practice in cataloging and classification of materials. Dual listed with LIBS 5380. *Prerequisite:* 20 hours of general education (liberal arts). (Offered based on sufficient demand and resources)

4520. Library Practice. 2-8 (Max. 8). Provides an overview of library organization, administration and service by capitalizing upon the utilization of practical experiences in dealing with everyday problems of the library. Application of principles learned in the various library courses will be stressed. Students must contact department the semester prior to enrollment for authorization to enroll in the course. This course serves as student teaching experience for students wishing to be endorsed in library science. *Prerequisite:* LIBS 4340.

Department of Counselor Education

332 Education Building, 766-2366
FAX: (307) 766-3720

Web site: www.uwyo.edu/cnsled

Department Head: Mary Alice Bruce

Professors:

MARY ALICE BRUCE, B.S. Purdue University 1971; M.S. Iowa State University 1989; Ph.D. 1991; Professor of Counselor Education 2007, 1991.

Associate Professors:

KENT W. BECKER, B.S. Oklahoma State University 1982; M.A. University of Northern Colorado 1990; Ed.D. 1994; Associate Professor of Counselor Education 2003, 1998.

Assistant Professors:

SERENA LAMBERT, B.A. Linfield College 1991; M.A. University of Montana 1999; Ph.D. Idaho State University 2005; Assistant Professor of Counselor Education 2005.

DEBORAH MCGRIF, B.S. University of Nebraska—Lincoln 1976; M.S.W. University of Nebraska—Omaha 1981; Ph.D. University of Wyoming 1999; Assistant Professor of Counselor Education 2002.

MICHAEL M. MORGAN, B.S. Brigham Young University 1993; M.S. Auburn University 1995; Ph.D. Purdue University 2003; Assistant Professor of Counselor Education 2003.

JANE WARREN, B.A. University of Wyoming 1974; M.A. 1979; Ph.D. 1987; Assistant Professor of Counselor Education 2007.

Counselor education curricula experiences concentrate on the integration of helping skills, theory and practice. The programs utilize a personalized, developmentally oriented focus and prepare professional counselors for entry into school, mental health, and higher education settings.

The undergraduate counseling courses are designed to achieve the following objectives:

- enhance self-awareness
- facilitate effective relationship skills
- increase leadership knowledge and skills
- assist learners in maximizing their potential

Counselor education offers a doctoral degree and two-year (61 semester hours) master's degree programs. The Council for Accreditation of Counseling and Related Educational Programs (CACREP) has conferred accreditation to the following M.S. programs in counselor education: school counseling, community mental health counseling, and student affairs practice in higher education. The Ph.D. program is also CACREP accredited. Additional information may be found in the online at www.uwyo.edu/cnsled and in the *Graduate Bulletin*.

Counseling (CNSL)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Relationship Skills: Counseling in Action. 3. [(none)↔I, L] Content-based course that focuses on the critical-thinking skills necessary to understand, analyze, and produce knowledge within the framework of educational inquiry; introducing students to the role of counseling in diverse settings. Themes discussed include classroom human relations skills, counseling in a diverse society, legal and ethical issues in human relations fields, and various specialties in the practice of counseling.

2200. Introduction to Student Leadership. 2. [(none)↔CS, L] Acquaints student leaders with skills and competencies necessary for successful service in the university community. (Normally offered each fall semester)

2300. Counseling Skills for the Helping Professions. 3. Presents instruction and practice in basic counseling and communication skills. Emphasizes listening, responding, encouraging and initiating change in interpersonal communication through mediation and conflict resolution. *Prerequisites:* sophomore standing; permission of Coordinator of Counselor Education program.

2800. Undergraduate Seminar in: __. 1-3 (Max. 9). Reserved for academic course work related to student interest in classes associated with examining the discipline of counseling from many varied perspectives. *Prerequisite:* Declared major in the social sciences, human services, or education.

3010. Student Leadership Strategies. 2. Develops skills and competencies requisite to effective leadership. Provides student leaders with skills they will profit from, both while enrolled at the university and later in their chosen careers. (Normally offered each spring semester)

4040. Interpersonal Relationship Skills.

3. Designed to help students and administrators develop their human relation skills to improve interpersonal effectiveness and communication as related to generic life skills. Dual listed with CNSL 5040. *Prerequisites:* 12 hours in education/psychology.

4410. Elementary and Middle School Guidance.

2. Primarily for teachers, teachers-in-training, administrators, and other educators. Covers individual and group guidance and counseling strategies in the elementary and middle school. Emphasizes the role of teachers and other educators in providing guidance, counseling and experiences for children to promote their social, emotional and psychological growth. Dual listed with CNSL 5410. *Prerequisites:* junior standing; 6 hours of education and/or behavioral sciences and graduate standing to receive graduate credit.

4520. Fundamentals of Counseling (B) 3.

Students learn some of the skills of counseling and develop an understanding of elementary principles of counseling theory, as well as a better understanding of themselves in relation to other people. Dual listed with CNSL 5520. *Prerequisites:* junior standing; 6 hours of education or psychology and graduate standing to receive graduate credit. (Offered on campus and online all semesters)

4620. Student Personnel Services. 2.

Introductory course. Provides an overview of student personnel services in higher education. Emphasizes the role of a modern day personnel worker and relationships to the entire academic endeavor. Dual listed with CNSL 5620. *Prerequisites:* consent of department; 6 hours education and/or behavioral sciences.

Department of Educational Studies

213 McWhinnie Hall, 766-3130

FAX: (307) 766-2018

Web site: www.uwyo.edu/edstudies

Department Head: Allen Trent

Professors:

AUDREY KLEINSASSER, B.A. Augustana College 1973; M.A. University of South Dakota 1989; Ph.D. University of Kansas 1988; Professor of Educational Studies 2000, 1988.

KAY PERSICHITTE, B.A. University of Northern Colorado 1975; M.Ed. Colorado State University 1985; Ph.D. University of Northern Colorado 1993; Professor of Educational Studies 2003; Dean, College of Education 2008.

FRANCISCO RIOS, B.A. Carroll College 1978; M.A. University of Wisconsin 1981; Ph.D. 1991; Professor of Educational Studies 2002, 2000.

Associate Professors:

JOHN KAMBUTU, B. A. University of Wyoming 1991; M. A. 1992; Ph.D. 1998; Associate Professor of Educational Studies 2008, 1999.

LINDA KEEFAUVER, B.S. East Tennessee State University 1968; M.S. University of Tennessee 1970; Ed.D; Associate Professor of Educational Studies 1982, 1976.

ALLEN TRENT, B.S. Eastern Kentucky University 1986; M.S. University of Dayton 1992; Ph.D. The Ohio State University 2000; Associate Professor of Educational Studies 2006, 2000.

Assistant Professors:

CARMELITA CASTAÑEDA, B.S. California State University 1985; M.S. Virginia Polytechnic and State University 1992; Ed.D. University of Massachusetts at Amherst 2002; Assistant Professor of Educational Studies 2002.

JEASIK CHO, B.A. Taegu National University of Education 1991; M.Ed. Kyungpook National University 1993; Ph.D. The Ohio State University 2001; Assistant Professor of Educational Studies 2003.

ANGELA JAIME, B.S. California State University, Sacramento 1995; M.A. San Francisco State University 1997; Ph.D. Purdue University 2005; Assistant Professor of Educational Studies 2004.

EDWARD JANAK, B.S. Fredonia 1992; M.Ed. University of South Carolina 1996; Ph.D. 2003; Assistant Professor of Educational Studies 2006, 2002.

KEVIN ROXAS, B.A. University of Notre Dame 1992; M.A. University of San Francisco 2000; Ph.D. Michigan State University 2008; Assistant Professor of Educational Studies 2008.

LESLIE ZORKO, B.A. Colorado State University 1965; M.Ed. 1970; Assistant Professor of Educational Studies 1980, 1974.

Educational Studies encompasses curriculum designed to bring together courses offered in the academic areas of educational foundations (including introductory content in educational history, sociology, and policy), teaching and learning, assessment, multicultural education, and educational psychology (including developmental psychology). The department offers interdisciplinary, field-based courses for those candidates in the first two phases of the teacher education program. The connection between course work, multicultural education, educational psychology, and teaching and learning, along with field-based experiences, has the structural effect of bridging the gap between theory and practice.

The courses offered by the department are linked with the state of Wyoming's Professional Education Standards. In addition to striving to meet the state standards, the faculty works to engage students on issues of leadership, literacy, multiculturalism/diversity, special education, and technology. Authentic assessments are key aspects of department courses. Educational

Studies courses are guided by the Wyoming Teacher Education Program (WTEP) Standards. These standards (available at www.uwyo.edu/ted/coe_standards.asp) are aligned with the state Professional Education Standards and are assessed via a series of WTEP Learner Outcomes. Additional information about learner outcomes and the Wyoming Teacher Education Program Assessment Plan can be found at ed.uwyo.edu/LearnerOutcomes.asp.

Masters and Doctoral degrees in education are available. The Educational Studies Department joins with the departments of Secondary Education and Elementary and Early Childhood Education to offer graduate programs in Curriculum and Instruction. Additional information may be found in the Graduate Bulletin or on the Curriculum and Instruction Department's web page (www.uwyo.edu/c_i).

Educational Studies (EDST)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1500. Education for Social Justice. 3.

[(none)♦I, L] Provides an introduction to the College of Education, UW, and the field of education in general. Students discover the primary intellectual activities associated with diversity, multiculturalism, and social justice. Will be of most interest to those interested in teaching as a career.

2450. [EDFD 2450]. Human Lifespan Development. 3. [C2♦CS]

Offers a multidisciplinary and holistic overview of human development from conception to old age. Examines how and why people function as they do, the physical, cognitive, social and emotional aspects of being human and inquires into how goals, interests and roles in life change over time. While this course is interesting to any student, in that we learn about ourselves, it is especially useful for those preparing for human services careers. *Prerequisite:* 2.50 UW institutional GPA. (Offered each semester)

2475. [EDUC 2475]. Independent Studies. 1-3 (Max. 9).

Offers students the opportunity to complete special course-related work independently under direction of a college faculty member. Directed readings are done and projects are completed. Requires at least two conferences with instructor. *Prerequisite:* consent of instructor.

2480. Diversity and the Politics of Schooling. 4. [(none)♦D]

Designed to acquaint the student with philosophical, social, and political influences on North American education, to develop an understanding of the qualities of critical thinking, to raise awareness of critical issues in education, to develop an understanding of individual differences, diversity and multiculturalism. *Prerequisites:* Grade of C or better in EDST 2450, sophomore standing, 2.5 cumulative GPA. (Offered each semester)

3000 [EDUC 3000]. Teacher as Practitioner. 6. [W2↔O, WB] Begins Phase II of the teacher education sequence. Practicum experiences are integral. Links theory and philosophy to classroom practice. Focuses on three major topics: planning for educational experiences, instructional models and strategies, and managing classrooms. *Prerequisites:* WTEP application, successful completion of WA, Grade C or better in QA, 2.75 cumulative GPA, Grade C or better in EDST 2480, Grade C or better in ITEC 2360, grade C or better in EDEX 2484, Grade C or better in O course, junior standing, current State of Wyoming Substitute Teaching License. (Offered each semester)

3550. Educational Assessment. 2. Designed to introduce students to key concepts and issues in classroom and standardized education assessments. Topics include standards, reliability and validity of norm- and criterion-referenced assessments, and special issues surrounding the assessment of students with special needs. Addresses the basic ideas of classroom test design. *Prerequisites:* grade of C or better in QA course, and EDST 2480, 2.75 Cumulative UW Institutional GPA. (Offered each semester)

4000. Foundations of Education for a Diverse Society. 3. Designed to acquaint students with philosophical, social, and political influences of North American education; to develop an understanding of the qualities of critical thinking for reflective teaching; to raise awareness of contemporary critical issues in education; to develop an understanding of individual differences, diversity, and multiculturalism. Practicum included. *Prerequisites:* earned bachelor's degree from an accredited institution, a cumulative UW institutional GPA of 2.75 or better and EDST 2450.

4740 [EDFD 4740]. Field Studies in _____. 1-5 (Max. 12). Offered only through extension services. Broad and flexible; can be utilized in numerous situations to meet local needs. Credit in this course is not applicable toward advanced degrees. *Prerequisite:* 6 hours of education. (Offered based on sufficient demand and resources)

4750 [EDUC 4750]. Perspectives on Teaching. 1-3 (Max. 6). For undergraduate students selected to collaborate with UW faculty or professional staff in the delivery and sometimes the design of a university course, this course augments in-class experiences with an examination of basic learning and teaching principles. Offered for S/U only. *Prerequisites:* 3.0 GPA; consent of instructor.

Department of Elementary/Early Childhood Education

313 McWhinnie Hall, 766-6366

FAX: (307) 766-2018

Web site: www.uwyo.edu/elemed

Department Head: Alan R. Buss

Professors:

JAMES F. BAUMANN, B.A. University of Notre Dame 1971; M.S. University of Wisconsin-Madison 1973; Ph.D. 1980; Professor of Elementary and Early Childhood Education 2007.

BARBARA A. CHATTON, B.A. University of California-Santa Cruz 1970; M.L.S. University of California-Los Angeles 1971; Ph.D. The Ohio State University 1982; Professor of Elementary and Early Childhood Education 1994, 1982.

R. TIMOTHY RUSH, B.A. University of Minnesota 1970; M.A. 1978; Ph.D. Purdue University 1980; Professor of Elementary and Early Childhood Education 1994, 1982.

Associate Professors:

STEVEN M. BIALOSTOK, B.A. University of the Pacific 1975; M.S.W. California State University-Sacramento 1986; Ph.D. University of Arizona 1999; Associate Professor of Elementary and Early Childhood Education 2005, 2000.

MICHELLE BUCHANAN, B.A. University of Utah 1974; M.Ed. University of Illinois 1976; Ph.D. University of Washington 1995; Associate Professor of Elementary and Early Childhood Education 2002, 1997.

ALAN R. BUSS, B.A. Brigham Young University 1989; M.A. 1993; Ph.D. University of Wyoming 1998; Associate Professor of Elementary and Early Childhood Education 2003, 1997.

JUDITH Z. ELLSWORTH, B.A. Prescott College 1971; B.S. University of North Dakota 1972; MU&RP University of Colorado 1980; Ph.D. University of Washington 1995; Associate Professor of Elementary and Early Childhood Education 2001, 1995.

STEVEN LOCKE, B.A. Indiana University 1985; M.S. Portland State University 1991; Ph.D. Indiana University 1997; Associate Professor of Elementary and Early Childhood Education 2005, 2001.

PATRICK MANYAK, B.A. Pepperdine University 1988; M.S. 1990; Ph.D. University of Southern California-Los Angeles 2001; Associate Professor of Elementary and Early Childhood Education 2007, 2001.

PETER WILLIAM MORAN, B.A. University of Wyoming 1987; M.A. Kansas State University 1993; Ph.D. 2000; Associate Professor of Elementary and Early Childhood Education 2006, 2001.

DEBRA PARKINSON, B.S. University of Iowa 1982; M.A. 1984; Ph.D. University of Wyoming 2001; Associate Professor of Elementary and Early Childhood Education 2007, 2002.

AMY ROBERTS, B.S. Indiana University 1986; M.A. Portland State University 1991; Ph.D. Indiana University 1996; Associate Professor of Elementary and Early Childhood Education 2004, 1998.

KATHERINE MUIR WELSH, B.A. University of California—Berkeley 1986; Single Subject Teaching Credential (Life Sciences) University of California—Santa Barbara 1990; Ph.D. University of California—Los Angeles 2002; Associate Professor of Elementary and Early Childhood Education 2008, 2002.

Assistant Professors:

SCOTT A. CHAMBERLIN, B.A. Purdue University 1989 and 1993; M.Ed. University of Utah 1998; Ph.D. Purdue University 2002; Assistant Professor of Elementary and Early Childhood Education 2003.

TRICIA JOHNSON, B.S. Lehigh University 1991; M.Ed. 1993; Ed.S. George Washington University 1997; Ed.D. Columbia University 2004; Assistant Professor of Elementary and Early Childhood Education 2006.

MARGARET C. LAUGHLIN, B.A. University of California - Santa Barbara 1977; M.A. University of San Francisco 1992; Ed.D. 1996; Assistant Professor of Elementary and Early Childhood Education 2006.

LYDIAH NGANGA, B.S. University of Wyoming 1998; M.S. 2000; Ph.D. 2005; Assistant Professor of Elementary and Early Childhood Education 2006.

Assistant Lecturers:

KIMBERLY MILLER, B.A. University of Wyoming 1998; M.A. 2003; Assistant Lecturer of Elementary and Early Childhood Education, 2007.

AMY SPIKER, B.A. University of Wyoming 1989; M.A. 2004; Assistant Lecturer of Elementary and Early Childhood Education 2007.

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Professor Emeritus:

Patricia McClurg

Elementary Education (EDEL)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Exploring Hot Topics in Education.

2. [(none)↔I] Academic, content-based course designed for first year students. Focuses on critical-thinking skills necessary to understand, analyze, and produce knowledge within the framework of educational inquiry.

1010 [EDCI 1010]. Field Experience for Prospective Elementary and Secondary Teachers. 1-4 (Max. 4). Introductory course in teacher education. Provides an overview of the theory and practice of what is required to become and be a teacher. An initial practicum is included. Cross listed with EDSE 1010. *Prerequisite:* sophomore standing. (Offered fall, spring and summer)

1410. [EDCI 1410]. Elementary School Mathematics Seminar I. 1. Covers selection of basic mathematics concepts, materials and curricula appropriate for elementary schools. This course parallels the content of MATH 1100 and should be taken during the same semester. Experiences in assigned mentor teacher classrooms are required. *Prerequisite:* consent of instructor.

1430. [EDCI 1430]. Life Science in the Elementary School. 1. Covers selection of basic life science concepts, materials and curricula appropriate for elementary school. This course parallels the content of LIFE 1020 and concurrent enrollment in LIFE 1020 is expected. (Offered both semesters)

1440. [EDCI 1440]. Physical Science in the Elementary School. 1. Covers selection of basic physical science concepts, materials and curricula appropriate for elementary school. This course parallels the content of PHYS 1090 and concurrent enrollment in PHYS 1090 is expected. (Offered both semesters)

1450. [EDCI 1450]. Earth Science in the Elementary School. 1. Covers selection of basic earth science concepts, materials, and curricula appropriate for elementary school. This course parallels the content of ASTR/GEOL 1070 and concurrent enrollment in ASTR/GEOL 1070 is expected. (Offered both semesters)

2000 [EDCI 2000]. Undergraduate Seminar in _____, 1-2 (Max. 8). Designed to discuss strategies and instructional activities used in content courses the students take and to be a linkage between what the prospective teachers study and what they will teach. It provides the opportunity to discuss appropriate activities, strategies and programs in a teaching area related to the content area being studied. Cross listed with EDSE 2000. *Prerequisite:* consent of instructor.

2280 [LIBS 2280]. Literature for Children.

3. [C1↔CH] A survey course, the purpose of which is to prepare prospective elementary teachers and library-media specialists to provide knowledgeable service in the use of print and non-print materials for children. Includes study of evaluative criteria, wide reading, viewing and listening as well as discussion of literature for children. *Prerequisite:* successful completion of ENGL 1010, sophomore standing, education major. (Offered both semesters)

2410. [EDEL 1420, EDCI 1420]. Elementary School Mathematics Seminar II. 1. Covers selection of basic mathematics concepts, materials and curricula appropriate for elementary schools. This course parallels the content of MATH 2110 and concurrent enrollment in MATH 2110 is expected. *Prerequisite:* consent of instructor.

3140 [EDCI 3140]. Teaching Reading in the Elementary School. 2-4 (Max. 4). Provides an acquaintance with basic assumptions underlying curriculum and processes in reading and to give opportunity for selecting and using instructional materials. *Prerequisites:* junior standing, 2.5 minimum cumulative GPA, satisfactory completion of WA requirements, committee approval. (Offered fall, spring and summer)

3170 [EDCI 3170]. Meaning in Art. 3. Provides a foundation for understanding art in order to facilitate the teaching of art and the integration of art education into the elementary school curriculum. Involves both applied reading and studio production. Attention is given to development of artistic skills and meaningful art experiences based on DBAE principles. *Prerequisites:* junior classification, 2.5 minimum cumulative GPA. (Offered fall, spring and summer)

3550 [EDCI 3550]. Methods of Teaching: _____, 2-5 (Max. 10). Develops an understanding of methods common to all disciplines. Through reflective inquiry and problem solving students will become involved in teaching practices and techniques. Cross listed with EDSE 3550. *Prerequisites:* EDST 3000, junior class standing, 2.5 minimum cumulative GPA, must maintain grade of C or better in major. (Offered fall, spring and summer)

4000 [EDUC 4000]. Becoming a Reflective Practitioner: Practicum. 2. Part of Phase IIIa of the teacher education program. Practicum experience is integral to EDUC 4250 and must be taken concurrently. Cross listed with EDSE 4000. *Prerequisites:* 2.5 cumulative GPA, successful completion of EDST 3000 (grade, interview and portfolio).

4109 [EDUC 4109]. Elementary Humanities Education. 5. Content and pedagogy to develop the reflective practitioner of teaching humanities in the elementary school. The following themes are addressed: curriculum; theory translated into instructional planning and practice; practices that promote effective learning; behavior and relationships; and teaching strategies. *Prerequisites:* 2.75 cumulative GPA;

2.5 content GPA; grade of C or better in EDST 3000; successful completion of specific content courses required in major; grade of C or better in EDST 3550; concurrent enrollment in EDEL 4309 and EDEL 4409.

4309 [EDUC 4309]. Elementary Literacy Education. 2-5 (Max. 6). [W3↔WC] Encompasses content and pedagogy to develop the reflective practitioner for teaching literacy in the elementary school. Addresses the following themes: curriculum; theory translated into instructional planning and practice; practices that promote effective learning; behavior and relationships; and teaching strategies. *Prerequisites:* 2.75 cumulative GPA; 2.5 content GPA; Grade C or better in EDST3000, successful completion of specific content courses required in major; grade C or better in EDST3550. Concurrent enrollment in EDEL 4109 and EDEL 4409.

4409 [EDUC 4409]. Elementary Math/Science Education. 5. Includes content and pedagogy in teaching math/science in the elementary school. Addresses the following themes: curriculum; theory translated into instructional planning and practice; practices that promote effective learning; behavior and relationships; and teaching strategies. *Prerequisites:* 2.75 cumulative GPA; 2.5 content GPA; grade of C or better in EDST 3000; successful completion of specific content courses required in major; grade of C or better in EDST 3550; concurrent enrollment in EDEL 4109 and EDEL 4309.

4500 [EDUC 4500]. Residency in Teaching. 1-16 (Max. 24). Comprises the final professional academic semester of the teacher education program. A full-time residency, including a period of being intensively mentored and coached, a period of independent teaching and a period of team teaching. Available for S/U only. Cross listed with EDSE 4500 and EDEX 4500. *Prerequisites:* 2.75 cumulative GPA, 2.5 GPA in major content courses, completion of all content courses, successful completion of Phase IIIa specific pedagogy and practicum, complete review of the prospective teacher's record.

4740 [EDCI 4740]. Field Studies in _____, 1-12 (Max. 45). Offered only through extension services. Broad and flexible and can be utilized in numerous situations to meet local needs. Credit in this course is not applicable toward advanced degrees. Cross listed with EDEL 4740. Offered S/U only. *Prerequisite:* 6 hours of education. (Offered based on sufficient demand and resources)

4975. [EDCI 4975] Independent Study. 1-3 (Max. 6). Primarily for upper-division students who can benefit from independent study with minimal supervision. Given to allow interested students to pursue specific aspects of curriculum and instruction. Cross listed with EDSE 4975. *Prerequisites:* 12 hours of education courses and consent of instructor.

Early Childhood

The College of Education offers two certification programs in early childhood education: one at the undergraduate level for teachers serving children from birth to age eight and one at the graduate level serving children with special needs from birth through age five. In addition, undergraduate students in elementary education may choose early childhood education as an 18 hour area of concentration. All of the programs are interdisciplinary in nature, with course offerings available from four different colleges on campus: education, agriculture, arts and sciences and health sciences. Specific advising in each of the early childhood options support students in their program development. The following courses are a partial list of the course offerings available. Masters and Doctoral degrees in education are available. Additional information may be found in the Graduate Bulletin (online at www.uwyo.edu/uwgrad/bulletin) or on the department's webpage.

Early Childhood (EDEC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1020 [EDCI 1020]. Introduction to Early Childhood Education. 3. Introduces students to the field of early childhood education through lecture, discussion, observation and participation. The student will be exposed to different programs currently in operation in the community and region. Special emphasis will be placed on evaluating early childhood education as a career.

3000. Observing Young Children. 3. The general goal of the course is to introduce students to observation and recording techniques appropriate for assessing the growth and development of young children in the school setting. A secondary goal is to understand how observation and recording techniques can facilitate curriculum planning and parent-teacher conferences. *Prerequisites:* EDEC 1020 and FCSC 2121.

3210 [EDCI 3210]. Program and Curriculum Development for Young Children. 2-3 (Max. 3). Provides an overview of early childhood education curriculum and the development of early childhood programs. Emphasis is placed on the development of a balanced early childhood curriculum. *Prerequisites:* EDEC 1020, 3000 and FCSC 2121.

3220 [EDCI 3220]. School Program for Young Children. 3. Describes, identifies, and examines programs and best practices of teaching young children in school settings. Lecture and discussion are supported by a two hour practicum in an early childhood school setting. *Prerequisites:* EDEC 1020 and FCSC 2121.

4320 [EDCI 4320]. Oral and Written Language Acquisition. 3. Introduces the student to the nature of language development as it pertains to oral and written communication in education. Recent research in the areas of oral and written language acquisition is compared and contrasted. Implications for facilitating the development of all language modes in educational settings is emphasized. *Prerequisites:* EDST 2480 and junior class standing with declared major in Elementary Education or Family and Consumer Sciences, and EDEL 2280.

4350. Health Management Issues in Early Education. 3. Provides the student the opportunity to examine the implications of a child's health status on his/her personal, educational, social and cognitive development. Provides personnel working closely with the young child with disabilities and his/her family an understanding of the issues related to health concerns and a framework for intervention planning. Special emphasis is placed on concerns specific to the child in a day care, preschool or other school setting. Cross listed with NURS/FCSC 4350. *Prerequisites:* junior standing and consent of the instructor.

Curriculum and Instruction (EDCI)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

4000. Environmental Education for Teachers. 2-3 (Max. 6). An introduction to the philosophy, methods and content of environmental education for students in elementary and secondary education. *Prerequisite:* senior standing.

4120 [LIBS 4120]. Literature for Young Adults. 3. Designed for prospective and working library media specialists and teachers who wish to strengthen their backgrounds in the utilization of literature with young adults in classrooms and libraries. The course involves the reading and critique of literature. Dual listed with EDCI 5120. *Prerequisite:* senior level or graduate standing. (Offered based on sufficient demand and resources)

4140 [LIBS 4140]. Storytelling. 3. [C3↔(none)] An investigation of storytelling as an art and as an aid to instruction. Emphasis is on literature for preschool and elementary age children. Dual listed with EDCI 5140. *Prerequisite:* junior standing or EDCI 4120 is recommended. (Offered based on sufficient demand and resources)

4160 [LIBS 4160]. Recent Trends in Children's Literature. 2. Important new developments in the subject matter, settings and style of children's books are identified and studied. Students in this course are expected to have a strong basic knowledge of children's literature. Dual listed with EDCI 5160. *Prerequisite:* EDCI 4120. (Offered based on sufficient demand and resources)

4300. Introductory Diagnosis Corrective Reading Instruction. 3-4 (Max. 4). Provides students with opportunities to work with children who have severe reading problems. Students in this class tutor one or two children for an entire semester under the direct guidance of the course instructor and the supervising teacher of the teaching division of the reading clinic. *Prerequisite:* consent of instructor.

4330. Advanced Diagnosis, Corrective Reading Instruction. 3-4 (Max. 4). Designed to provide students with opportunities to work with children who have reading problems. Students in this class tutor under the direct guidance of the course instructor. *Prerequisites:* EDCI 3100, 4300 and consent of instructor.

4340. Integrating Computer-Based Technologies in Teaching _____. 1-3 (Max. 6). Equips students with information, skills and insights necessary for successful integration of computer-based technologies into classroom teaching. Content includes modeling of techniques, teaching strategies and appropriate applications of computer-based technologies in specific content areas and consideration of computer-related issues facing educators. *Prerequisite:* ITEC 2360 or equivalent.

4350. Introduction to Second Language Acquisition. 3. Addresses theoretical and conceptual foundations of working with second language learners. Focus is on the classroom applications of this theoretical base to interactions with English language learners, curriculum, instruction, assessment and evaluation, classroom organization, and school-community relations. Native American language revitalization issues are featured. Dual listed with EDCI 5350. *Prerequisites:* none.

4400 [3400]. The Middle School. 2-3 (Max. 3). This is the basic professional course in the program for the preparation of middle years educators. A review of the reorganization of junior high school leading to the establishment of the middle school philosophy, the teacher, and the unique function of the middle school compose the essential outline topics of the course. *Prerequisites:* EDST 3000, EDST 2450 or PSYC 4300, WA, 2.5 GPA. (Offered fall, spring and summer)

4450 [4250]. Issues In Multicultural Education. 3. Provides the future teacher and other interested students with a better understanding of current issues and social foundations of multicultural America. Enables more accurate educational decisions related to utilizing strengths and diversity of each cultural group. Dual listed with EDCI 5450. *Prerequisite:* students must have at least 12 credit hours in education classes.

Department of Educational Leadership

316 Education Building, 766-5649

FAX: (307) 766-5638

Web site: www.uwyo.edu/edleadership

Department Head: Suzanne Young

Professor:

WILLIAM G. BERUBE, B.S. Mayville State College 1973; M.S. North Dakota State University 1980; Ed.D. University of Wyoming 1985; Professor of Educational Leadership 2003, 1996, 1990.

SUZANNE YOUNG, B.S. Metropolitan State College 1978; M.S. University of Northern Colorado 1990; Ph.D. 1995; Professor of Educational Leadership 2007, 1996.

Assistant Professors:

HEATHER DUNCAN, B.Sc. University of Aberdeen, Scotland 1975; M.Ed. Brandon University, MB 2000; Ph.D. University of Saskatchewan, SK 2004; Assistant Professor of Educational Leadership 2005.

MARK STOCK, B.S. Wright State University 1979; M.S. 1985; Ed.S. Ball State University 1995; Ed.D. 2002; Assistant Professor of Educational Leadership 2007.

Educational Leadership

The curriculum in educational leadership is designed to prepare superintendents, principals, supervisors, and leaders for public schools and organizations to perform duties of a specialized nature and to function effectively in a leadership capacity. The program provides sufficient breadth to give candidates for advanced degrees ample opportunity to develop essential competencies.

At the completion of the graduate programs in Educational Leadership, candidates will demonstrate the ability to promote the success of all students through evidence of:

1. Facilitating the development, articulation, implementation, and stewardship of a district and/or school vision of learning supported by the school community.
2. Promoting a positive district and/or school culture, providing effective instructional programs, applying best practice to student learning, and designing comprehensive professional growth plans for staff.
3. Managing the organization, operations, and resources of a district and/or school in a way that promotes a safe, efficient, and effective learning environment.

4. Collaborating with families and other community members, responding to diverse community interests and needs, and mobilizing community resources.
5. Acting with integrity, fairly and in an ethical manner.
6. Understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.
7. Completing substantial, sustained, standards-based work in real settings, planned and guided cooperatively by the institution and school district personnel.

A course has been designed specifically for undergraduate students to acquaint them with administrative purposes and functions.

Students who major in educational leadership may choose one of the following certificate or degree programs: Principal Endorsement certificate program (does not lead to a master's degree), Master of Arts in Education, and Doctor of Education. Additional information may be found in the Graduate Bulletin (online at www.uwyo.edu/uwgrad/bulletin) or on the department's webpage.

Educational Administration (EDAD)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1000. Schools and Democracy. 1. [(none)♦I] Content-based course focuses on critical-thinking skills necessary to understand, analyze, and produce knowledge within the framework of educational inquiry; introducing students to the themes of the agenda of the National Network for Educational Renewal which focuses on the purpose of schools in America.

4215. The Teacher and the School Administrator. 2. Provides prospective elementary and secondary teachers and speech pathologists with information relative to staff-administrator relationships. Topics stressed include educational philosophy focusing on an individual belief system about teaching and learning, classroom management and discipline practices, teacher supervision and evaluation, legal issues pertaining to the teacher, conflict resolution and employment issues. *Prerequisites:* junior standing and 2.5 minimum cumulative GPA. (Normally offered fall semester)

Department of Secondary Education

114 McWhinnie Hall, 766-3275

FAX: (307) 766-2018

Web site: ed.uwyo.edu/seced

Department Head: Linda Hutchison

Professors:

ROBERT MAYES, B.S. Emporia State University 1979; M.S. 1981; Ph.D. Kansas State University 1989; Professor of Secondary Education 2006.

CARL L. REYNOLDS, B.S. University of Illinois 1967; Ed.M. 1974; Ed.D. 1976; Professor of Agricultural Education 1993, 1976.

TIMOTHY F. SLATER, B.S. Kansas State University 1989; B.S. Ed. 1989; M.S. Clemson University 1991; Ph.D. University of South Carolina 1993; Professor of Secondary Education 2008.

Associate Professors:

CAROL J. BRYANT, B.A. University of Northern Colorado 1975; M.A. University of Wyoming 1990; Ph.D. 1995; Associate Professor of Secondary Education 2001, 1995.

LYDIA DAMBEKALNS, B.A. College of William and Mary 1981; M.Ed. Pennsylvania State University 1994; Ph.D. 1996; Associate Professor of Secondary Education 2002, 1996.

LINDA HUTCHISON, B.A. Humboldt State University 1978; M.A. Stanford University 1986; Ph.D. University of Washington 1992; Associate Professor of Secondary Education 2000, 1993.

Assistant Professors:

WILLIAM J. MEDINA-JEREZ, B.S. Universidad de Pamplona, Pamplona, Colombia 1990; M.S. University of Iowa 2002; Ph.D. 2005; Assistant Professor of Secondary Education 2006.

LESLIE RUSH, B.S. Texas A&M—Commerce 1984; M.Ed. 1996; Ph.D. University of Georgia, 2002; Assistant Professor of Secondary Education 2002.

CAROLYN J. TAYLOR, B.A. SUNY Fredonia University 1988; M.A. Louisiana State University 1999; Ph.D. 2003; Assistant Professor of Secondary Education 2005.

Instructor:

STEPHANIE J. SLATER, B.S. Harding University 1992; M.S. Montana State University 2007; Instructor of Secondary Education.

Temporary Assistant Professor:

JASON KATZMANN, B.S. Texas Women's University 1994; M.A. Colorado College 2000; Ph.D. University of Northern Colorado 2007; Temporary Assistant Professor of Secondary Education 2007.

ROD THOMPSON, B.A. University of Nebraska at Kearney 1991; M.A. University of Northern Iowa 1998; Temporary Assistant Professor of Secondary Education 2003.

The undergraduate degree program in secondary education includes course work in the University Studies Program and additional content areas along with a sequence of professional education courses and field experiences with classroom teachers. Students select a concentration from agriculture, art, English, industrial technology, mathematics, modern languages, science, or social studies.

Masters and Doctoral degrees in education are available. The Secondary Education Department joins with the departments of Educational Studies and Elementary and Early Childhood Education to offer graduate programs in Curriculum and Instruction. Additional information can be found in the Graduate Bulletin or on the Curriculum and Instruction Department's web page (www.uwyo.edu/c_i).

Secondary Education (EDSE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Exploring Hot Topics in Secondary Education. 2. [(none)↔I, L] Academic, content-based course designed for first year students. Focuses on critical-thinking skills necessary to understand, analyze, and produce knowledge within the framework of educational inquiry. Themes include diversity and other issues found in Secondary Education (e.g. High Stakes testing, inclusion, or school violence). Faculty member's expertise areas within secondary education will determine appropriate themes.

1010 [EDCI 1010]. Field Experience for Prospective Elementary and Secondary Teachers. 1-4 (Max. 4). Introductory course in teacher education. Provides an overview of the theory and practice of what is required to become and be a teacher. An initial practicum is included. Cross listed with EDEL 1010. *Prerequisite:* sophomore standing. (Offered fall, spring and summer)

2000 [EDCI 2000]. Undergraduate Seminar in _____. 1-2 (Max. 8). Designed to discuss strategies and instructional activities used in content courses the students take and to be a linkage between what the prospective teachers study and what they will teach. It provides the opportunity to discuss appropriate activities, strategies and programs in a teaching area related to the content area being studied. Cross listed with EDEL 2000. *Prerequisite:* consent of instructor.

3010 [EDIE 3010]. Contemporary Philosophies in Industrial Education. 1-3 (Max. 3). Provides industrial education students with a sound contemporary philosophy for curriculum development and instructional planning. Emphasis is placed on current programs, philosophies, history, youth group development and advisory committee activities. *Prerequisites:* 8 credit hours of education course work. (Offered through UW/CC)

3020. Facilities and Advisery Management. 2-4 (Max. 4). Students engage in identifying RFP applications and applies for grants that are geared toward the Technical classroom as well as the process of assembling and managing an advisory committee, a required component of all CTE programs. Prepares Technical Teachers for the non-teaching requirements associated with the CTE programs. *Prerequisites:* junior standing in Technical Education.

3030. Construction Technology. 3. Introduces students to the principles and practices of the construction industry, through a combination of classroom and laboratory experiences. In addition, this course outlines the construction content area as taught in the industrial technology classroom and emphasizes development of curricula materials. *Prerequisites:* 12 hours of technical content courses from an approved list. (Offered through UW/CC)

3040 [EDIE 3040]. Energy and Power Technology. 3. A conceptual analysis and synthesis of energy requirements and sources, with emphasis on alternate energy systems. Analysis of energy conversion and the application of mechanical, fluid, thermal and electrical power systems. *Prerequisite:* PHYS 1050 or 1110. (Offered through UW/CC)

3050 [EDIE 3050]. Communications Technology. 3. Designed to give students knowledge and experience in the major concepts of graphic communications, including: communication, design, image generation and production practices of modern industry. Also covers curricular and pedagogical concerns related to teaching communications technology at the secondary school level. *Prerequisite:* 12 credit hours of technical content courses from an approved list. (Offered through UW/CC)

3270. Subject Matter Specific Methods I: Secondary English Education. 3-6 (Max. 6). Introduction of content and pedagogy in English Education. *Prerequisite:* grade of C or better in EDST 2480.

3271. Subject Matter Specific Methods I: Secondary Mathematics Education. 3-6 (Max. 6). Introduction of content and pedagogy in Mathematics Education. *Prerequisite:* grade of C or better in EDST 2480.

3272. Subject Matter Specific Methods I: Art Education K-12. 3-6 (Max. 6). Introduction of content and pedagogy in Art Education K-12. *Prerequisite:* grade of C or better in EDST 2480.

3273. Subject Matter Specific Methods I: Secondary Social Studies Education. 3-6 (Max. 6). Introduction of content and pedagogy in Secondary Social Studies Education. *Prerequisite:* grade of C or better in EDST 2480.

3274. Subject Matter Specific Methods I: Music Education K-12. 3-6 (Max. 6). Introduction of content and pedagogy in Music Education. *Prerequisite:* grade of C or better in EDST 2480.

3275. Subject Matter Specific Methods I: Secondary Science Education. 3-6 (Max. 6). Introduction of content and pedagogy in Science Education. *Prerequisite:* grade of C or better in EDST 2480.

3276. Subject Matter Specific Methods I: Secondary Science Modern Language Education. 3-6 (Max. 6). Introduction of content and pedagogy in Modern Language Education. *Prerequisite:* grade of C or better in EDST 2480.

3277. Subject Matter Specific Methods I: Secondary Industrial Technology Education. 3-6 (Max. 6). Introduction of content and pedagogy in Industrial Technology Education. *Prerequisite:* grade of C or better in EDST 2480.

3278. Subject Matter Specific Methods I: Secondary Agriculture Education. 3-6 (Max. 6). [(none)↔WC] Introduction of content and pedagogy in Agriculture Education. *Prerequisite:* grade of C or better in EDST 2480.

3540 [EDCI 3540]. Teaching Reading and Study Strategies in the Content Areas. 2-4 (Max. 4). Provides students majoring in secondary education programs with a knowledge of reading factors as they relate to various disciplines. Content includes estimating students' reading ability, techniques for vocabulary development, questioning strategies, and developing reading related study skills. *Prerequisites:* junior standing and minimum 12 hours in discipline area.

3550 [EDCI 3550]. Methods of Teaching: _____. 2-5 (Max. 10). Develops an understanding of methods common to all disciplines. Through reflective inquiry and problem solving students will become involved in teaching practices and techniques. Cross listed with EDEL 3550. *Prerequisites:* EDST 3000, junior class standing, 2.5 minimum cumulative GPA, must maintain grade of C or better in major. (Offered fall, spring and summer)

3610 [EDIE 3610]. Manufacturing Technology. 4. Introduction to the concepts, materials and processes of modern manufacturing, systems. Develops skills related to product development, machine tool operation, manufacturing system and process control. Correlates course content with instructional practices related to manufacturing learning situations in the secondary classroom. *Prerequisites:* 12 credit hours of technical content courses from an approved list. (Offered through UW/CC)

4000 [EDUC 4000]. Becoming a Reflective Practitioner: Practicum. 2. Part of Phase IIIa of the teacher education program. Practicum experience is integral to EDSE 4250 and must be taken concurrently. Cross listed with EDEL 4000. *Prerequisites:* 2.5 cumulative GPA, successful completion of EDST 3000 (grade, interview and portfolio).

4010. Middle Level Practicum. 2. Incorporates classroom instruction and field experiences dealing with middle level classroom management, lesson planning/delivery in the context of early adolescent intellectual, physical and psychological domains. Emphasizes grades 5-8. S/U only. *Prerequisites:* EDST 3000, EDCI 4400 (or concurrent enrollment) 2.5 GPA.

4070 [EDAS 4070, EDVE 4070]. Educational Trends in _____ . 1-3 (Max. 6). Provides reading, discussion, research and appraisal of new methods, materials, equipment and experimental programs concerned with improvement of education as it pertains to areas of secondary education: agricultural, art, English, mathematics, middle school, modern language, science, and social studies education. The maximum allowable credit applies to the total offerings under this number. *Prerequisite:* 6 hours of education.

4250 [EDUC 4250]. Becoming a Reflective Practitioner: Specific Pedagogy in English. 5-8 (Max. 8). [W3↔(none)] Comprised of content and pedagogy in the student's major teaching field, English education. Must be taken in conjunction with EDSE 4000. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 minimum GPA in major, successful completion of outcomes in EDST 2000 and 3000, successful completion of specific content courses required in the major and concurrent enrollment in EDSE 4000 is expected.

4251 [EDUC 4251]. Becoming a Reflective Practitioner: Specific Pedagogy in Mathematics. 5-8 (Max 8). [W3↔(none)] Comprised of content and pedagogy in mathematics. Must be taken in the same semester as the 2 semester hour course, EDSE 4000. *Prerequisites:* 2.5 minimum cumulative GPA, successful completion of EDST 3000, and concurrent enrollment in EDSE 4000 is expected. (Offered fall semester)

4252 [EDUC 4252]. Becoming a Reflective Practitioner: Specific Pedagogy in Art Education K-12. 5-8 (Max. 8). [W3↔(none)] Comprised of content and pedagogy in the student's major teaching field, art education. Must be taken in the same semester as the 2 semester hour course, EDSE 4000. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 GPA in major, successful completion outcomes in EDST 2000 and 3000, successful completion of specific content courses required in the major and concurrent enrollment in EDSE 4000. (Offered fall semester)

4253 [EDUC 4253]. Becoming a Reflective Practitioner: Specific Pedagogy in Social Studies Education. 5-8 (Max. 8). [W3↔(none)] Comprised of content and pedagogy in the student's major teaching field, social studies education. Must be taken in the same semester as the 2 semester hour course, EDSE 4000. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 GPA in major, successful completion outcomes in EDST 2000 and 3000, successful

completion of specific content courses required in the major and concurrent enrollment in EDSE 4000. (Offered fall semester)

4254 [EDUC 4254]. Becoming a Reflective Practitioner: Specific Pedagogy in Music. 8. [W3↔WC, D] Comprised of content and pedagogy in the student's major teaching field. Must be taken in the same semester as the 2 semester hour course, EDSE 4000. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 GPA in major, successful completion outcomes in EDST 2000 and 3000, successful completion of specific content courses required in the major and concurrent enrollment in EDSE 4000. (Offered fall semester)

4255 [EDUC 4255]. Becoming a Reflective Practitioner: Specific Pedagogy in Science. 5-8 (Max. 8). [W3↔(none)] Provides an integrated approach to the methodology of teaching secondary science. Covers basic concepts of physical sciences with processes as a vehicle to learn about the natural discussion, lesson planning, use of appropriate technology, appraisal of new trends in science education and considerable time implementing ideas in the secondary classroom. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 GPA in major, successful completion outcomes in EDST 2000 and 3000, successful completion of specific content courses required in the major and concurrent enrollment in EDSE 4000. (Offered fall semester)

4256 [EDUC 4256]. Becoming a Reflective Practitioner: Specific Pedagogy in Modern and Classical Languages. 5-8 (Max. 8). [W3↔(none)] Designed to provide an introduction to curriculum and instructional processes in multiple secondary school subjects. General and discipline-specific issue and methods will be addressed. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 GPA in major, successful completion outcomes in EDST 2000 and 3000, successful completion of specific content courses required in the major and concurrent enrollment in EDSE 4000 is expected. (Offered fall semester)

4257. Specific Pedagogy in Industrial Technology Education. 8. [W3↔(none)] Comprised of content and pedagogy in the student's major teaching field, industrial technology education. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 GPA in major, successful completion outcomes in EDST 2000 and 3000, successful completion of specific content courses required in the major and concurrent enrollment in EDSE 4000. (Offered through UW/CC)

4260 [EDUC 4260]. Becoming a Reflective Practitioner: Specific Teaching Methods for Applied Science and Technology. 5-8 (Max. 8). [W3↔(none)] Comprised of content and pedagogy in the student's major teaching field. Concurrent enrollment in EDSE 4000 practicum as stated in college guidelines is expected. *Prerequisites:* acceptance into the Wyoming Teacher Education Program, satisfac-

tory score on the CAT, 2.5 GPA, class status and completion of certain classes as noted in this bulletin. (Offered fall semester)

4261 [EDUC 4261]. Becoming a Reflective Practitioner: Specific Pedagogy in Business and Marketing. 8. [W3↔(none)] Comprised of content and pedagogy in the student's major teaching field, business and marketing education. Must be taken in the same semester as the 2 semester hour course, EDSE 4000. *Prerequisites:* 2.5 minimum cumulative GPA, 2.5 GPA in major, successful completion outcomes in EDST 2000 and 3000, successful completion of specific content courses required in the major and concurrent enrollment in EDSE 4000. (Offered fall semester)

4270. Subject Matter Specific Methods II: Secondary English Education. 3-6 (Max. 6). [(none)↔WC] Advanced content and pedagogy in English Education. *Prerequisites:* Grade of C or better in EDSE 3270, Grade of C or better in EDST 3000, 2.75 minimum cumulative GPA, 2.5 minimum GPA in major content courses, Grade of C or better in specific content courses required in the major.

4271. Subject Matter Specific Methods II: Secondary Mathematics Education. 3-6 (Max. 6). [(none)↔WC] Advanced content and pedagogy in Mathematics Education. *Prerequisites:* Grade of C or better in EDSE 3271, Grade of C or better in EDST 3000, 2.75 minimum cumulative GPA, 2.5 minimum GPA in major content courses, Grade of C or better in specific content courses required in the major.

4272. Subject Matter Specific Methods II: Art Education K-12. 3-6 (Max. 6). [(none)↔WC] Advanced content and pedagogy in Art Education. *Prerequisites:* Grade of C or better in EDSE 3272, Grade of C or better in EDST 3000, 2.75 minimum cumulative GPA, 2.5 minimum GPA in major content courses, Grade of C or better in specific content courses required in the major.

4273. Subject Matter Specific Methods II: Secondary Social Studies Education 3-6 (Max. 6). [(none)↔WC] Advanced content and pedagogy in Social Studies Education. *Prerequisites:* Grade of C or better in EDSE 3273, Grade of C or better in EDST 3000, 2.75 minimum cumulative GPA, 2.5 minimum GPA in major content courses, Grade of C or better in specific content courses required in the major.

4274. Subject Matter Specific Methods II: Music Education K-12. 3-6 (Max. 6). Advanced content and pedagogy in Music Education. *Prerequisites:* Grade of C or better in EDSE 3274, 2.75 minimum cumulative GPA, 2.5 minimum GPA in major content courses, Grade of C or better in specific content courses required in the major. Pass Piano Proficiency (may be done this semester, but must be passed before student teaching). Completed Portfolio reviewed and accepted by music education committee. WB completed (2nd level writing course) with Grade of C or better.

4275. Subject Matter Specific Methods II: Secondary Science Education. 3-6 (Max. 6). [(none)◀WC] Advanced content and pedagogy in Science Education. *Prerequisites:* grade of C or better in EDSE 3275, grade of C or better in EDST 3000, 2.75 minimum GPA, 2.5 minimum GPA in major content courses, grade of C or better in specific content courses required in the major.

4276. Subject Matter Specific Methods II: Secondary Modern Language Education 3-6 (Max. 6). [(none)◀WC] Advanced content and pedagogy in Modern Language Education. *Prerequisites:* Grade of C or better in EDSE 3276, Grade of C or better in EDST 3000, 2.75 minimum cumulative GPA, 2.5 minimum GPA in major content courses, Grade of C or better in specific content courses required in the major.

4277. Subject Matter Specific Methods II: Secondary Industrial Technology Education. 3.-6 (Max. 6). [(none)◀WC] Advanced content and pedagogy in Industrial Technology Education. *Prerequisites:* grade of C or better in EDSE 3277, grade of C or better in EDST 3000, 2.75 minimum GPA, 2.5 minimum GPA in major content courses, grade of C or better in specific content courses required in the major.

4278. Subject Matter Specific Methods II: Secondary Agriculture Education. 3.-6 (Max. 6). Advanced content and pedagogy in Agriculture Education. *Prerequisites:* grade of C or better in EDSE 3278, grade of C or better in EDST 3000, 2.75 minimum GPA, 2.5 minimum GPA in major content courses, grade of C or better in specific content courses required in the major.

4500 [EDUC 4500]. Residency in Teaching. 1-16 (Max. 24). Comprises the final professional academic semester of the teacher education program. A full-time residency, including a period of being intensively mentored and coached, a period of independent teaching and a period of team teaching. Available for S/U only. Cross listed with EDEL 4500 and EDEX 4500. *Prerequisites:* 2.75 cumulative GPA, 2.5 GPA in major content courses, completion of all content courses, successful completion of Phase IIIa specific pedagogy and practicum, complete review of the prospective teacher's record.

4740 [EDCI 4740]. Field Studies in _____. 1-5 (Max. 12). Offered only through extension services. Broad and flexible and can be utilized in numerous situations to meet local needs. Credit in this course is not applicable toward advanced degrees. Cross listed with EDEL 4740. Offered S/U only. *Prerequisite:* 6 hours of education. (Offered based on sufficient demand and resources)

4975. [EDCI 4975] Independent Study. 1-3 (Max. 6). Primarily for upper-division students who can benefit from independent study with minimal supervision. Given to allow interested students to pursue specific aspects of curriculum and instruction. Cross listed with EDEL 4975. *Prerequisites:* 12 hours of education courses and consent of instructor.

Agricultural Education

This curriculum provides a diversified background of technical and professional agricultural subjects necessary to prepare teachers of agricultural education for service in the public middle, secondary and post-secondary schools. Courses listed below are taken in the Secondary Education Department.

Agricultural Education (EDAG)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

3160 [EDAS 3160, EDVE 3160]. Principles of Agricultural Education. 3. Explores the background, scope and content of agricultural education. Specific competencies required for teacher certification including history, philosophy and trends, successful program planning, applied sciences, organization/utilization of advisory groups, adult education, curriculum, career counseling computer applications, cooperative and SAE programs, facilities and advising the FFA. *Prerequisites:* junior standing. (Offered spring semester)

3170 [EDAS 3170, EDVE 1050]. Agricultural Structures Systems. 3. Prepares preservice teachers for the many skills and types of materials involved in structural systems as applied to agriculture. Includes competencies in planning structure sites, surveying, foundations, selection of materials, construction, and building utilities and conveniences.

3180 [EDAS 3180, EDIE 2180]. Welding Technology. 3. Includes the technology necessary to perform most hot and cold metal skills used in the agricultural industry. Includes maintenance on and fabrication of agricultural equipment systems. Heavy emphasis is placed on laboratory practice to develop expertise in performing skills and in the demonstration/teaching of these skills. Lab fee required.

4070 [EDAS 4070]. Trends: _____. 2 (Max. 6). Designed to provide reading, discussion, research, and the appraisal of new methods, materials, equipment, and experimental programs concerned with the improvement of education as it pertains to the areas of vocational education; vocational agriculture, home economics, and trade and industrial education. Each department in the college may make offerings under this number. The maximum allowable credits for each department is 6 semester hours. *Prerequisites:* 6 hours of education.

4170 [EDAS 4170, EDVE 4170]. Agricultural Mechanical Systems and Laboratory. 3. Introduces advanced knowledge and skills in the areas of agricultural mechanics taught in the secondary schools. Safety management and practices are included as well. Includes those practices required of future teachers of agriculture in planning and delivering agricultural mechanics instruction. *Prerequisites:* EDAG 3170 and 3180.

4180 [EDAS 4180, EDVE 4180]. Agricultural Power Systems. 3. Prepares preservice teachers for teaching electrical, mechanical, fluid, and alternative power systems. Emphasizes selection, installation, and maintenance of electric motors and controls, internal combustion engines, hydraulic components and systems, and alternative power sources. *Prerequisites:* junior standing.

4220. [EDAS 4220] Agricultural Technologies. 3. Explores the latest technologies and methodologies involved in measuring, monitoring, and collecting data by which management decisions are made in production agriculture and agribusiness. Focuses on the theme of teaching and applying precision/sustainable agriculture principles to all phases of agricultural systems. *Prerequisite:* EDAG 3160.

4740 [EDAS 4740, EDVE 4740]. Field Studies in _____. 1-5 (Max. 12). Explores the latest technologies involved in measuring and collecting data with technology instrumentation by which management decisions are made in production and agribusiness. Focuses on the theme of applying and teaching precision agriculture principles to all phases of agricultural systems. Satisfactory/Unsatisfactory only. Cross listed with EDEL 4740. *Prerequisite:* 6 hours of education courses.

4760 [EDAS 4760, EDVE 4760]. Cooperative Work Experience Programs and Student Organizations. 3. Prepares educators and administrators to plan, organize, implement and evaluate cooperative work experience programs, to design curriculum and to advise student vocational organizations. *Prerequisite:* 6 hours of education courses. (Normally offered spring semester)

4780 [EDAS 4780, EDVE 4780]. Education-Industry Experience. 1-16 (Max. 16). Provides opportunity for students to extend their program beyond the campus. Develops work experience programs for students based upon their area of interest and specialization. *Prerequisite:* consent of instructor and department head.

4970 [EDAS 4970, EDVE 4970]. Individual Problems. 1-3 (Max. 6). Provides flexible credit for seniors who may need credit for graduation, or for students who wish to undertake intensive study of a special problem identified in a regular class. Offered in areas of vocational education, vocational agriculture, family and consumer sciences, and trade and industrial education. *Prerequisite:* 12 hours of education courses.

Industrial Technology Education

Industrial technology education is a comprehensive, action-based teacher education program concerned with technical means, their evolution, utilization and significance with industry, its organization, personnel, systems, techniques, resources and products and their social and cultural impact. This program is offered at UW/CC-Casper.

Industrial Technology Education (EDIE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1020. Wood Materials and Processes. 3. Permits the student to acquire a technical knowledge about these industrial, nonmetallic fiber materials. Emphasis is placed on their characteristics and the processes that are applied in modifying them for industrial use. *Prerequisite:* EDIE 1030.

3000 [3570]. Machine Tool and Casting Technology. 3. This precision-machining and metals-casting course is designed to advance the student's knowledge of industrially-accepted metal removal practices and foundry techniques. Metals casting and machine tool operations are combined to form the integral part of the laboratory learning experience in conjunction with individually directed research and development in the area of materials and processes. *Prerequisite:* EDIE 2160.

3060 [2020]. Industrial Graphics. 3. Prepares pre-service teachers with concepts and knowledge of the application of graphic standards and conventions and of these as communications languages in a variety of industrial applications. It is intended to extend the knowledge and skills of industrial technology teacher education and students.

3065 [2040]. Construction Graphics. 3. Designed for industrial technology teacher education students to learn designing, construction and functional planning principles, communication conventions, and drafting techniques as related to residential and/or small commercial structures and the construction industry. The purpose is to develop competence in and the concepts of communication processes in the construction industry so that students will be prepared to teach these competencies. *Prerequisite:* EDIE 3060.

3070 [4560]. Metallic and Plastics Materials Testing for Teachers. 3. Provides pre-service industrial education students with a broad background in the strength and use of metals and plastics common to industry. The student applies theoretical principles to actual testing situations as well as learn how to teach their future students

in this area. In addition, students develop experience in the various processes common to the industrial use of metals and plastics. *Prerequisite:* EDIE 1030, MATH 1050.

3190 [2190]. Wood Fabrication Technology. 3. Permits the student to achieve technical specialization. Emphasis is placed on the construction and manufacturing processes that are applied to these nonmetallic fiber materials for the production of components and finished products. *Prerequisite:* EDIE 1020.

3550. Electronic Circuits. 3. A study of DC, AC and transistor circuits. Emphasis on circuit design, construction and testing. Use of common electric equipment for circuit testing.

4050 [2250]. Graphics Communications. 3. Designed to give the student a knowledge of and experience in the major concepts of graphic communications: (1) communication, (2) design, (3) image generation, (4) pre-production and production and, (5) binding, finishing and packaging. *Prerequisite:* EDIE 3050.

4070. Educational Trends in _____. 2 (Max. 6). Provides reading, discussion, research and the appraisal of new methods, materials, equipment and experimental programs concerned with the improvement of education as it pertains to the areas of vocational education; agriculture education, family and consumer sciences education, and trade and industrial education. Each department in the college may make offerings under this number, but the maximum allowable credit for each department is 6 semester hours. *Prerequisite:* 6 hours of education courses.

4300 [3500]. Computer-Aided Drafting. 3. Allows students to develop computer-aided drawings. It is designed primarily for new users of computer-aided drafting, although experienced users will find it to be a class in which additional skills can be developed. *Prerequisite:* EDIE 2020, 2040.

4570. Electronics Communications. 3. Conceptual analysis and applications of analog and digital communications systems. Includes AM, FM, TV, fiber optics and computer communications systems. *Prerequisite:* EDIE 3550.

4740. Field Studies in Industrial Education. 1-5 (Max. 12). Provides an opportunity for teachers in the field to advance their study of selected topics for the improvement of instruction and/or programs and is offered through extension services. Topics are selected to meet the needs and interests of teachers in the geographical area where the course is to be offered. The instructional method is adapted to the nature of the topic and participants enrolled. Credit in this course is not applicable toward advanced degrees. *Prerequisites:* 6 semester hours of education courses and/or consent of instructor.

4970. Individual Problems. 1-3 (Max. 6). This course provides flexible credit for seniors who may need credit for graduation, or for advanced students who wish to undertake intensive study of a special problem identified in a regular class. The course is offered in the area of industrial education. *Prerequisite:* consent of department head.

Curriculum and Instruction (EDCI)

Please see page 237 for course listings.

Department of Special Education

113 McWhinnie Hall, 766-6325

FAX: (307) 766-4064

Web site: www.uwyo.edu/sped

Department Head: Martin Agran

Professors:

MARTIN AGRAN, B.A. City College of New York 1969; M.A. University of Rochester 1971; M.S. Oregon College of Education 1974; Ph.D. University of Illinois 1982; Professor of Special Education 2005.

JOHN STELLERN, B.A. University of California-Berkeley 1955; M.A. California State University-Los Angeles 1961; Ed.D. University of Northern Colorado 1966; Professor of Special Education 1973, 1969.

Associate Professor:

DOROTHY JEAN YOCOM, B.A. Whitworth College 1978; M.S. University of Oregon 1980; Ph.D. Oregon State University 1991; Associate Professor of Special Education 1997, 1991.

Assistant Professor:

ELIZABETH S. SIMPSON, B.A. University of Wyoming 1984; Ph.D. Auburn University 2000; Assistant Professor of Special Education 2001.

Senior Lecturer:

KAY COWIE, B.S. Northern State University 1968; M.S. 1970; Associate Lecturer 2004, 2000, 1997.

Professor Emeritus:

Ace Cossairt

Courses of study are offered through the Department of Special Education. The program offers certification embedded within a masters program (Note: Although all education majors must take EDEX 2484, Introduction to Special Education, the undergraduate courses listed below are not currently offered), or certification may be obtained in a certification-only program in which a student does not receive a Master's degree. See the *Graduate Bulletin* for information about the admission criteria and process.

The program is designed to prepare teachers to work with students with varied learning and behavior needs. Each course emphasizes practical experience and is associated with a performance objective, the proficiency of which must be demonstrated.

Exceptional Children (EDEX)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Hot Topics in Special Education. 1. Academic, content-based course designed for first-year students, focuses on the critical thinking skills necessary to understand, analyze, and produce knowledge within the framework of educational inquiry. Serves as an introduction to the intellectual community of the university. Themes discussed focus on special education issues as they relate to ourselves, our schools, and our place in the community. *Prerequisites:* none.

1010. Overview of Special Education. 3. Provides prospective special education teachers an overview and a broad knowledge base of the special education field. *Prerequisite:* consent of instructor.

2120. Special Education Intervention Process. 3. Introduces special education and education intervention and management model. Discusses models designed to prepare generalist and multidiscipline special education practitioners to conduct systematic and successful intervention with learning and/ or behavior problems. *Prerequisites:* overall GPA 2.5 and consent of instructor.

2350. Prescriptive Teaching Practicum. 1-8 (Max. 8). Encompasses live, on-going, supervised practicum experience with regular students and students with special needs. Heavily emphasizes observation and direct instructional involvement with students with a range of special needs. *Prerequisites:* overall GPA 2.5 and consent of instructor.

2484. Introduction to Special Education. 3. Designed to meet the needs of education majors for a required course in special education. *Prerequisite:* Concurrent enrollment in EDST 2480 or a grade of C or better and an institutional GPA of 2.50 or higher.

3230. Direct Instruction. 3. Applies specific instructional delivery skills to a variety of educational settings and disabilities. *Prerequisite:* consent of instructor.

3430. Special Education Curriculum Materials. 3. Involves assessment, adaptation and application of curriculum materials in the education of students with special needs. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

3440. Special Education Assistive Technology, Case Management, and Transition. 3. Addresses a variety of assistive technology applications for use with individuals with disabilities. Discusses case management techniques and transition components in special education. *Prerequisites:* overall GPA 2.5, 2.5 GPA in major and consent of instructor.

3470. Special Education Law. 3. Provides prospective special education teachers and support personnel with overview of important case and statutory law in special education. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

3550. Mental Disabilities. 3. Provides general information and assessment/teaching techniques used with children with mental retardation. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

3560. Behavior Management. 3. Provides systematic and measurable approaches for the management of behavior and motivation of hard-to-teach students and students with special needs. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

3660. Educational and Psychological Assessment. 3. Introduces students to specific psycho-educational and curriculum-based measures, procedures and instruments as they relate to teaching and programming for students with disabilities. Emphasis is placed on both formal and informal assessment tools. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing, consent of instructor and unit coordinator.

4190. Identification and Education of Gifted and Talented Students. 3. Provides students with the means to identify gifted and talented students to derive maximum benefit from educational programs. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major and consent of instructor.

4380. Special Education Teaching Practicum. 4. Encompasses live, on-going, supervised practicum experience with regular students and students with special needs. Emphasizes observation and direct instructional involvement with range of students with special needs in a variety of settings. *Prerequisites:* 2.5 GPA and consent of instructor.

4500. Residency in Teaching. 1-16 (Max. 24). Comprises the final professional academic semester of the teacher education program. A full-time residency, including a period of being intensively mentored and coached, a period of independent teaching and a period of team teaching. Available for S/U only. Cross listed with EDEL 4500 and EDSE 4500. *Prerequisites:* 2.75 cumulative GPA, 2.5 GPA in major content courses, completion of all content courses, successful completion of Phase IIIa specific pedagogy and practicum, complete review of the prospective teacher's record.

4570. Learning Disabilities. 3. Relates theoretical and practical aspects of learning disabilities to the classroom, teaching, various treatment techniques, as well as curriculum match and materials. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

4590. Emotional Disabilities. 3. Relates theoretical and practical aspects of emotional disturbance to classroom teaching, curriculum match and materials. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

4740. Field Studies in _____. 1-12 (Max. 12). Offered only through the office of Graduate and Continuing Professional Education. Broad and flexible; can be utilized in numerous situations to meet local needs. Credit in this course is not applicable toward advanced degrees. *Prerequisite:* consent of instructor.

4770. Consultant Teacher Strategies. 3. Represents an opportunity for students to examine and explore consultation concepts in the field of special education. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

4880. Parent and Paraprofessional Training. 3. Provides special education teachers specific techniques for training parents and paraprofessionals in the area of special education. *Prerequisites:* 2.5 overall GPA, 2.5 GPA in major, junior standing and consent of instructor.

4970. Seminar in Field Experiences. 1-5 (Max. 5). Encompasses teaching strategies and problems for special education majors. *Prerequisite:* consent of instructor.

Science and Mathematics Teaching Center (SMTC)

406 Wyoming Hall, 766-6381

FAX: (307) 766-3792

Web site: smtc.uwyo.edu

Director: Robert Mayes

Outreach Coordinator: Sylvia Parker

The Science and Mathematics Teaching Center (SMTC) is an intercollegiate, interdisciplinary program committed to excellence in science, mathematics, and technology education. Governed jointly by the Colleges of Education and Arts & Sciences, the SMTC, in cooperation with the Wyoming Department of Education and the Professional Teaching Standards Board (PTSB), serves as a science and mathematics education resource and professional development center for the state. The affiliate faculty for SMTC is comprised of faculty members from the College of Education, the College of Arts and Sciences, the College of Agriculture, and the College of Engineering and Applied Science.

The SMTC provides extensive off-campus professional development that serves Wyoming communities, administrators, teachers, students and school districts. SMTC in-service and extension courses, workshops, institutes and conferences are provided with the principal purpose of improving science and mathematics teaching in Wyoming.

The SMTC offers three graduate degree program options: the Master of Science Teaching, designed for secondary teachers; the Master of Science of Natural Science in Middle Level Math or Middle Level Science, designed for elementary, middle, and general science and mathematics teachers; and the Master of Science in Natural Science (Natural Science Education), designed for students that are completing the first year of their graduate program at Teton Science School. For further information on these programs, courses, and admission, please refer to the *Graduate Bulletin*.

Natural Science (NASC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1001. Quantitative Reasoning. 1. Focuses on quantitative reasoning defined broadly as viewing the world through a mathematical perspective. *Prerequisites:* none. Must apply to FIG.

4790. Topics in Natural Science. 1-6 (Max. 10). Presents selected science topics to acquaint teachers or prospective teachers with new concepts, materials or techniques, as introduced in various new school curricula. Topics may include earth science for the middle school, computer learning and/or elementary school environmental science. Includes laboratory. *Prerequisite:* junior standing.

4800. Field Studies in Natural Science. 1-6 (Max. 10). Explores topics best studied in the field, on location, or otherwise outside the traditional classroom. Topics may include grassland ecosystem, geology field trips for elementary children and/or schoolyard study areas. Includes laboratory. *Prerequisite:* junior standing.

College of Engineering and Applied Science

2085 Engineering Building

Robert Ettema, Dean
Phone: (307)766-4253 FAX: (307)766-4444
Web site: www.eng.uwyo.edu

Engineering is a profession that truly makes a difference. Engineers constantly discover how to improve lives by creating new solutions to real world problems and needs. From small villages to large cities, engineers are involved in innovative improvements to all aspects of life from health care, to energy production, to protecting and rehabilitating the environment, to developing the newest technological device. The broad background of communication, mathematical, scientific and problem solving skills provided at the University of Wyoming will prepare engineering graduates to pursue careers in engineering, construction, environmental policy, even medicine or law. The possibilities are endless! The creativity and innovative thinking developed in engineering enables students to lead rewarding lives, work with inspiring people, and give back to their communities.

Computer Science is a profession that is closely affiliated with engineering. At the University of Wyoming, degrees in Computer Science are awarded through the College of Engineering and Applied Science. The technology trends in this industry are also advancing at a tremendous rate. This requires that Computer Science education be at the forefront of new computing technologies, software languages, and networking.

Earth System Science (ESS) is a new, interdisciplinary major founded on the need to study the entire Earth system in order to address issues such as global warming, energy use, and ecosystem change. Each student is required to declare a concentration, which thus far include Anthropology, Atmospheric Science, Biology, Botany, Education, Geography, Geology and Geophysics, and Soil Science. The curricula were designed to be rigorous enough that students completing the program would qualify for graduate studies in their concentration. Further details may be obtained at www.uwyo.edu/ess.

Mission

The State of Wyoming is strongly dependent on the college for leadership and expertise in technical areas. To serve the state in this regard, the college strives for excellence in teaching, research, and technology transfer. The faculty emphasizes life-long learning and provides its graduates with the problem solving tools needed to address situations relevant to all aspects of society and its relationship to technology and science. Excellence in instruction requires a faculty

that is actively involved in research, in the practical application of research, and in consultation with practitioners. These extramural activities, when balanced with commensurate teaching responsibilities, translate into inspiration for students and resources for graduate education and faculty development.

Design Experiences

In direct support of the goals of the individual departments within the College of Engineering and Applied Science, the design process is consistently developed and integrated throughout the curriculum from the freshman year through the senior year. Within the engineering science program, design elements such as basic analysis skills, communication skills, experimental skills, computational skills, problem solving skills and design methodology are taught. At the departmental level, these skills are developed further and the concepts of design methodology are reinforced. The design process culminates in a comprehensive design experience within the student's major.

Accreditation

The following undergraduate programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology: architectural engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, and mechanical engineering. Accreditation of the petroleum engineering program is in progress.

Various options within different engineering programs are accredited as part of the primary major. That is, the Electrical Engineering/Bio-engineering option is accredited as an Electrical Engineering degree, and the Chemical Engineering/Petroleum option is accredited as a Chemical Engineering degree.

The Bachelor of Science in Computer Science is accredited by the Computer Accreditation Commission of the Accreditation Board for Engineering and Technology.

Programs of Study

Undergraduate Degrees

Bachelor of Science in Architectural Engineering
Bachelor of Science in Chemical Engineering
Bachelor of Science in Chemical Engineering (petroleum option)
Bachelor of Science in Civil Engineering
Bachelor of Science in Computer Engineering
Bachelor of Science in Computer Science
Bachelor of Science in Electrical Engineering
Bachelor of Science in Electrical Engineering (bioengineering option)
Bachelor of Science in Energy Systems Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Petroleum Engineering
Bachelor of Science in Earth System Science

Graduate Degrees

Master of Science

Atmospheric science
Chemical engineering
Civil engineering
Civil engineering/water resources
Computer science
Electrical engineering
Environmental engineering
Mechanical engineering
Petroleum engineering

Doctor of Philosophy

Atmospheric science
Chemical engineering
Civil engineering
Computer science
Electrical engineering
Mechanical engineering
Petroleum engineering

Candidates for the various master's degrees in engineering are required to do a full year's work in residence either under Plan A or Plan B. For details on graduate work in engineering, consult the *Graduate Bulletin* or write to the dean of engineering.

Students should understand that a strong background in mathematics is necessary to begin actively pursuing the engineering curriculum. Credit toward an en-gineering degree is not allowed for algebra and trigonometry. Students who did not take these courses in high school must take them at the University without engineering degree credit.

Coursework in all four-year curricula stresses the mastery of subjects fundamental to all fields of engineering. The balance of the program is divided between cultural context and courses applying to the particular field selected. The aim is to provide the student with such groundwork that the general principles acquired may be used successfully in any one of the several specialized fields he or she may follow after graduation.

Depending on the major, a minimum of 125 to 132 semester hours of credit is required for the bachelor's degree from the College of Engineering and Applied Science. All course work must be selected with prior approval. Detailed outlines of curricula are presented later under headings of the various departments of the college. Since most engineering programs are similar during the first year, students may change an engineering major during this time with little or no loss in credit.

The electives in cultural context must be selected such that the student meets all university studies requirements not covered by specific courses in the detailed curriculum outlines.

Degree candidates must meet the academic requirements of the university and must have a grade point average of 2.0 (C) or above in all engineering courses attempted at this university.

Students may not take a course for S/U credit to satisfy any requirement for a degree from the College of Engineering and Applied Science, unless the course is offered for S/U credit only.

All undergraduate engineering programs within the College of Engineering and Applied Science use the Fundamentals of Engineering Exam as one of their methods of outcomes assessment. As a graduation requirement, students must complete the exam, with a good faith effort, within one year prior to their expected graduation.

Preparation for the profession of engineering requires diligent work in the various curricula. The required credit hours can be completed in a four-year program, but because of the rigorous nature of some of the courses involved, some students may require additional time to complete degree requirements.

All engineering curricula are subject to minor program changes. The published curricula are general guides. Prospective students should consult the individual departments for current information.

Engineering Science

2085 Engineering Building, 766-4253

FAX: (307) 766-4444

Program Director: Richard J. Schmidt

Engineering Science offerings present the fundamental engineering concepts upon which most engineering analysis and design work is based. Faculty are drawn from all of the academic departments in the college. These core courses represent the majority of engineering offerings at the freshman and sophomore level.

Courses in engineering science have their roots in mathematics and physical science, extending knowledge toward creative application. Thus, students must take their courses in calculus, chemistry, physics and engineering science in a timely manner. Details are given in the published curriculum for each program. A grade of C or better must be earned in all courses that are prerequisite to any required engineering science course.

Engineering Science (ES)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Orientation to Engineering Study. 1. [F1↔I, L] Skills and professional development related to engineering. Involves problem solving, critical thinking and ethics, as well as activities to help transition to university environment. Required of all freshmen entering engineering curricula. Students with credit in UNST 1000 may not receive credit for this course. (Normally offered both semesters)

1002. Introduction to Engineering Information Literacy. 0.5. [(none)↔L] Offers transfer students the opportunity to satisfy the College of Engineering and Applied Science requirements for the Information Literacy and the initial O component of the University Studies Program. *Prerequisites:* none.

1060. Introduction to Engineering Problem Solving. 3. An overview of the methodology used in the engineering profession for analyzing complex engineering systems. Employs example engineering topics for some current computational tools for this purpose. Laboratory. *Prerequisite:* MATH 1400 or MATH 1450 or ACT Math Score of 25 or MPE score of 4.

2110. Statics. 3. [M3↔(none)] Vector statics of particles, rigid bodies and distributed loads. *Prerequisites:* MATH 2205 or concurrent enrollment and (ES 1060, COSC 1010, or COSC 1030) or concurrent enrollment. (Offered fall, spring and summer)

2120. Dynamics. 3. Vector dynamics of particles and rigid bodies, including impulse-momentum and work-energy. *Prerequisites:* ES 2110 and MATH 2205; PHYS 1210 or concurrent enrollment. (Offered fall, spring and summer)

2210. Electric Circuit Analysis. 3. Basic concepts of electric circuit theory, dependent sources, network theorems, first and second order circuits, phasers, three-phase circuits. Laboratory. *Prerequisite:* MATH 2205. (Offered fall, spring and summer)

2310. Thermodynamics I. 3. Macroscopic systems involving energy and its various forms. Fundamental concepts including energy, mass and entropy balances. Pure substances and availability. Reversible and irreversible processes. *Prerequisites:* (ES 2120 or PHYS 1210), MATH 2210. (Offered fall and spring)

2330. Fluid Dynamics. 3. Incompressible flow of ideal and real fluids. Potential and stream functions; similitude and dimensional analysis. *Prerequisite:* MATH 2210 and (ES 2120 or PHYS 1210). (Offered fall, spring and summer)

2410. Mechanics of Materials. 3. Mechanics of deformable bodies, including energy methods. *Prerequisite:* ES 2110 and MATH 2205. (Offered fall and spring)

4910. Survey of Engineering Management. 3. Offers a survey of a variety of topics related to engineering management. The objective is to introduce students to some of the non-technical aspects of engineering practice and management. *Prerequisite:* junior standing in an engineering degree program.

4965. EPSCoR Research. 1. Seminar for undergraduates selected for EPSCoR research. Topics include graduate school, entrepreneurship, presentations. *Prerequisite:* selection for EPSCoR research.

4970. Engineering CO-OP. 1 (Max. 6). Provides a mechanism for students on engineering co-op to maintain continuous registration and have the co-op experience reflected on their transcript. Credit earned will not normally count toward graduation credit. Offered S/U only. *Prerequisite:* must be involved in an engineering co-op experience.

**Department of
Atmospheric Science**
6034 Engineering Building, 766-3245
FAX: (307)766-2635
Web site: www.atmost.uwyo.edu
Department Head: Alfred R. Rodi

Professors:

TERRY DESHLER, B.A. University of Wyoming 1969; M.S. 1975; Ph.D. 1982; Professor of Atmospheric Science 1999, 1991.

ROBERT D. KELLY, B.A. University of Wyoming 1973; M.S. 1978; Ph.D. University of Chicago 1982; Professor of Atmospheric Science 1990, 1984.

THOMAS R. PARISH, B.S. University of Wisconsin 1975; M.S. 1977; Ph.D. 1980; Professor of Atmospheric Science 1990, 1980.

ALFRED R. RODI, B.S. University of Chicago 1967; M.S. 1969; Ph.D. University of Wyoming 1981; Professor of Atmospheric Science 1993, 1981.

JEFFERSON R. SNIDER, B.S. University of Oregon 1979; M.S. University of Arizona 1982; Ph.D. University of Wyoming 1989; Professor of Atmospheric Science 2004, 1990.

Associate Professors:

BART GEERTS, Licentiaat Physical Geography Katholieke University, Belgium 1984; Engineer in Irrigation Sciences 1986; Ph.D. University of Washington 1992; Associate Professor of Atmospheric Science 2005, 1999.

DEREK C. MONTAGUE, B.Sc. University of Southampton (UK) 1964; Ph.D. 1967; Associate Professor of Atmospheric Science 1988.

Assistant Professor:

ZHIEN WANG, B.S. Anhui Normal University (China) 1990; M.S. Chinese Academy of Sciences 1994; Ph.D. University of Utah 2000; Assistant Professor of Atmospheric Science 2004.

Professors Emeritus:

John D. Marwitz, Gabor Vali

Adjunct Professors:

W.A. Cooper, D.J. Hofmann, C.A. Knight, W.R. Sand, C.P.R. Saunders

Atmospheric Science is a rapidly developing discipline in which meteorology, physics, chemistry, biology, engineering, mathematics and computer science are all being applied in an effort to better understand the earth's atmosphere. The entire development of atmospheric science demonstrates how progress can result from the application of knowledge developed in the basic sciences to a complex environmental system. Concurrently, atmospheric scientists develop many observational and analytical techniques unique to the study of the atmosphere. Over the past decades, atmospheric science developed vigorously, stimulated by the availability of the latest satellite, ground-based and aircraft observations, as well

as the availability of large computers for numerical simulations of atmospheric processes. At the same time, the importance of the atmosphere as a crucial resource in the welfare and survival of humankind is being recognized, as knowledge about how the atmosphere behaves is obtained.

The Department of Atmospheric Science offers graduate programs leading to the M.S. and Ph.D. degrees. In addition, a cooperative program with the University of Wyoming physics department is available leading to the Ph.D. degree in atmospheric physics.

In these graduate programs, great emphasis is placed on the active research involvement of students both during the academic year and during the summer months. The low student to faculty ratio in the department ensures an atmosphere of vital cooperation among students, faculty and staff. Student theses form integral parts of the department's research productivity and almost always lead to publishable results.

Research interests in the department center around cloud and precipitation physics, cloud and mesoscale atmospheric dynamics, tropospheric and stratospheric aerosols and chemistry, ozone depletion, wind energy, global change, instrumentation and air quality. These interests are also reflected in the department's academic program, which has the breadth and depth necessary to give students a background for entering into many different types of employment upon graduation.

A number of unique research tools are available in the department. Prominent among these is the King Air research aircraft which carries extensive instrumentation and computer-directed data acquisition systems. The department maintains a well-equipped observatory at the peak of the 11,000 foot Elk Mountain. The tropospheric and stratospheric balloon launch facility is used to sample aerosols, volcanic plumes, clouds and ozone in Laramie, and in both the north and south polar regions. Excellent laboratory facilities are available in the department's spacious quarters. These laboratories focus on aerosol and nucleation research, on atmospheric optics and atmospheric chemistry. Well-equipped electronic and mechanical construction and design facilities are conducive for work in instrumentation development. A wide range of computer facilities are available, providing excellent support both in hardware and software for research activities and for learning.

A prerequisite for admission to the program is a bachelor's degree in meteorology, engineering, physics, chemistry, mathematics or a similar relevant discipline. For general regulations concerning admission and degree requirements, the *Graduate Bulletin* of the University of Wyoming should be consulted. Graduate assistantships are available by application to the department and are awarded on the basis of past record and promise for achievement.

For material containing further details on curriculum and research programs, write to the graduate admissions coordinator or visit the web site at www.atmos.uwyo.edu.

Students interested in an undergraduate program in atmospheric science should consider the following:

The Earth System Science (ESS) curriculum with a concentration in atmospheric science is now available (www.uwyo.edu/ess). Please see the ESS section in this *Bulletin* or contact the Atmospheric Science office for more information.

Atmospheric Science (ATSC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2000. Introduction to Meteorology. 4.

[S3↔SE] First course in meteorology for students with minimal background in math and science. Provides general and practical understanding of weather phenomena. Emphasizes observational aspects of the science, meteorological view of the physical world and the impact the science has on life and society. Includes three hours of lecture and one laboratory per week. Includes atmospheric composition and structure, radiation, winds and horizontal forces, stability and vertical motions, general circulation, synoptic meteorology, clouds and precipitation, severe storms and atmospheric optics.

2100. Atmospheric Change: Composition and Climate. 3.

Introduces non-specialists to a broad overview of global, regional and local atmospheric impacts of mankind's activities and natural phenomena, and their consequences. Includes global warming and potential for climate change, atmospheric ozone depletion, acid rain, urban air pollution and problem alleviating mitigating strategies.

3032. Weather Analysis and Forecasting. 3.

Students learn to access, display, and interpret meteorological data including surface, upper air, satellite, and radar data, and become familiar with NWP models and weather predictability. They gain a basic understanding of dynamic and physical meteorology through real-time applications, and are introduced to meteorological data display software applications. *Prerequisites:* MATH 2205 and PHYS 1310 or equivalent.

4001. Modeling the Earth System. 4.

Takes a modeling approach to demonstrate how the Earth is integrated into an interconnected system through exchanges of energy and matter, and how Earth system functioning is susceptible to human alteration. Unifying concepts focus on quantitative interactions between the Earth and the Sun, and between the Earth's lithosphere, hydrosphere, biosphere and atmosphere. Cross listed with BOT/ESS/GEOL. *Prerequisites:* MATH2205 or equivalent and [ESS 2000 or GEOL 2000].

4010. Atmospheric Processes I. 3. Tools for understanding of physical processes occurring in the atmosphere are presented and integrated. Emphasis on ideal gas equation (for mixture), parcel concept, hydrostatics, mass conservation modeling, first law thermodynamics and radiation in the cloud-free atmosphere. Rudiments needed for problem solving are emphasized – integral and differential forms and dimensional analysis. *Prerequisites:* PHYS 1320 and either MATH 2210 or MATH 2310.

4031. Atmospheric Dynamics. 3. Atmospheric statics, development and interpretation of Newton's Second Law of Motion as applied to the atmosphere, scales of motion, atmospheric motion types, thermal wind equation, circulation and vorticity, boundary layer motions, introduction to quasi-geostrophic theory. *Prerequisites:* MATH 2210, PHYS 1320, ATSC 4010.

4033. Atmospheric Remote Sensing. 3. Satellite ground-based remote sensing from UV to microwave including the principles of atmospheric radiative transfer, descriptions of important satellite orbits and sensors, the retrieval of atmospheric forecast and air quality monitor. *Prerequisites:* MATH 2210 or 2310, and PHYS 1310 & 1320 or equivalent.

4035. Atmospheric Processes II. 3. Starts with physical-meteorology concepts necessary for a first-time examination of cloud microphysics – aerosol physical properties, Mie and Rayleigh radiative transfer, moisture variables, conserved temperatures, saturation vapor pressure – finishes with water and ice nucleation, diffusional and collection hydrometeor growth, and radiative forcing by clouds. *Prerequisites:* ATSC 4010 and ATSC 4031.

4320. The Ocean Environment. 3. Focuses on the ocean as a system. Objective is the development of interdisciplinary understanding of marine processes, especially those processes occurring along coastal margins. Emphasis is on the development of quantitative models and their use in understanding anthropogenic impact on ocean resources. Dual listed with ATSC 5320. *Prerequisites:* MATH 2310, PHYS 1310, CHEM 1030, ES 3060 (or ES 3070), LIFE 1010, senior standing or higher.

4400. The Physical Basis of Climate. 3. Global atmospheric and oceanic circulations, radiation balance, water balance and hydrologic cycle, energy balance, energy and moisture transport, evaporation and evapotranspiration, energetic processes, and theories of climate change. Dual listed with ATSC 5400. *Prerequisites:* MATH 2200, PHYS 1310, and CHEM 1020.

4410 [4330]. Introduction to Micrometeorology. 3. Quantitative and descriptive study of processes effecting exchanges of energy, momentum, gases, and particles between the atmosphere and the bio/geosphere, including the effects of plant cover, land use changes, diurnal and seasonal cycles, turbulence, boundary layer structure, local weather, and climate. Instrumentation and techniques also discussed. *Prerequisites:* ATSC 4010 and LIFE 2023.

4650. Undergraduate Research in Atmospheric Science. 2-6 (max 9). Course Description and *Prerequisites:* Independent research in atmospheric science under supervision of an atmospheric science faculty member. Projects are possible in the fields of cloud and aerosol physics, radar meteorology, mesoscale dynamics, and stratospheric chemistry. Participation in field work, involving the UW aviation or stratospheric ballooning facilities, is a possibility. Research results are summarized in a report. *Prerequisites:* ATSC 4000 and 4100, plus consent from advising faculty.

4900. Problems in Atmospheric Science. 1-3 (Max. 10). Independent study of a particular problem or phrase of atmospheric science, or presentation of reviews and discussion of current advances in atmospheric science investigations. *Prerequisites:* ATSC 4010, 4031, and 4035.

Earth System Science Program

6072 Engineering Building, 766-4955

FAX: (307) 766-2635

Web site: www.uwyo.edu/ESS

Director: Robert D. Kelly

Earth System Science (ESS) is an interdisciplinary, science-oriented, undergraduate program focusing on the interactions between the various components composing the Earth system: the biosphere, geosphere, lithosphere, hydrosphere, atmosphere, and anthrosphere. Students earning a BS degree in ESS are required to declare a Concentration in one of the participating programs, which include Anthropology, Atmospheric Science, Biology, Botany, Geography, Geology and Geophysics, Soil Science, and Secondary Education. This list will expand as the program grows. ESS is administered under a Committee of Deans, and the program departments reside in the colleges of Agriculture, Arts and Science, Education, and Engineering and Applied Science. The program is currently administered in Atmospheric Science. See page 314 for more information.

Department of Chemical and Petroleum Engineering

4055 Engineering Building, 766-2500

FAX: (307) 766-6777

Web site: www.eng.uwyo.edu/chemical

Department Head: Morris D. Argyle

Professors:

H. GORDON HARRIS, B.S. University of Texas 1961; M.S. 1962; Ph.D. University of California 1968; Professor of Petroleum Engineering 1984.

NORMAN R. MORROW, B.Sc. University of Leeds, England 1959; Ph.D. 1962; Professor of Petroleum Engineering 1992.

MACIEJ RADOSZ, M.S. Cracow University of Technology 1972; Ph.D. 1977; Professor of Chemical Engineering 2000; Department Head 2000.

MRITYUNJAI P. SHARMA, B.Sc. B.I.T.T. in Dhanbad, India 1967; M.Tech. I.I.T. in Kampur, India 1970; Ph.D. Washington State University 1977; Professor of Petroleum Engineering 1992, 1982.

BRIAN F. TOWLER, B.E. University of Queensland 1972; Ph.D. 1978; Professor of Petroleum Engineering 2006, 1988; Department Head, Chemical and Petroleum Engineering 2004.

Associate Professors:

MORRIS D. ARGYLE, B.S. Brigham Young University 1990; Ph.D. University of California at Berkeley 2003; Associate Professor of Chemical Engineering 2008, 2003.

DAVID A. BELL, B.S. University of Washington 1976; M.S. Rice University 1979; Ph.D. Colorado State University 1992; Associate Professor of Chemical Engineering 2000, 1993.

MAOHONG FAN, B.S. Wuhan University of Science and Engineering 1984; M.S. Beijing University of Science and Tech., 1992; Ph.D. Chinese Academy of Sciences 1997; Ph.D. Iowa State University 2000; Ph.D. Osaka University 2003; Associate Professor of Chemical Engineering 2008.

GUAN QIN, B.S. Tsinghua University 1984; M.E. Research Institute for Petroleum Exploration and Development, China National Petroleum Corporation 1987; Ph.D. University of Wyoming 1995; Associate Professor of Petroleum Engineering 2009.

Assistant Professors:

HERTANTO ADIDHARMA, B.Sc. Institute of Technology, Surabaya 1987; Ph.D. Louisiana State University 1999; Assistant Professor of Chemical Engineering 2005.

VLADIMIR ALVARADO, B.Sc. Universidad Central de Venezuela 1987; M.S. Institut Francais du Pétrole 2002; Ph.D. University of Minnesota 1996; Assistant Professor of Petroleum Engineering 2006.

LAMIA GOUAL, B.Sc. Ecole Nationale Polytechnique 1993; M.Sc. Imperial College London 1998; Ph.D. 2003; Assistant Professor of Chemical and Petroleum Engineering 2007.

PATRICK JOHNSON, B.S. Lehigh University 1992; M.S. University of Virginia 1994; Ph.D. Columbia University 2004; Assistant Professor of Chemical Engineering 2006.

MOHAMMAD PIRI, B.Sc. Azad University, Arak 1995; M.Sc. Azad University, Tehran 1998; M.Sc. Imperial College, London 2000; Ph.D. 2004; Assistant Professor of Petroleum Engineering 2006.

SHUNDE YIN, B.S. Shijiazhuang Railway University, China 1999; M.S. Chinese Academy of Sciences 2003; Ph.D. University of Waterloo 2008; Assistant Professor of Petroleum Engineering 2008.

Assistant Lecturer:

John Myers

Adjunct Professors:

John Ackerman
Michal Banaszak
Jill Buckley
Geoffrey Mason
Koichi Takamura

Professors Emeriti:

Chang Yul Cha
Harry A. Deans
Jack Evers
Henry W. Haynes

Chemical Engineering

Chemical Engineering is one of the most versatile of the engineering programs. It prepares students for employment in many diverse fields, such as petroleum refining, production of pharmaceuticals, petrochemicals, polymers and plastics, semiconductors, heavy industrial chemicals, and synthetic fuels. Chemical engineers also work in metallurgy, corrosion control, enhanced oil recovery, environmental pollution control, or pulp and paper manufacture. Undergraduate chemical engineering training has been found to be an excellent background for graduate work not only in engineering, but also in a number of other fields, including medicine, law, business, and the natural sciences.

The chemical engineering curriculum is based on a sound background in fundamental sciences, chemistry, mathematics, and physics. The essentials of engineering are added to this foundation, including fluid dynamics and thermodynamics. In order to develop the individual's social consciousness and to broaden the student's educational background, an integrated program of study in the humanities and social sciences is included in the curriculum. Chemical engineering courses in multicomponent thermodynamics,

transport phenomena, kinetics, process control and process design are concentrated in the junior and senior years. This program provides training for engineers to enter production, research, product and process development, process design, technical sales and engineering management positions. Training in chemical engineering equips the graduate to solve many of the problems facing society today: human health, energy shortages, synthetic fuels production, water and air pollution, toxic chemical control, and food production. Furthermore, our program prepares students interested in a career in medicine or the life sciences and is suitable for premed and pre-dental students.

The department offers a 12-credit-hour block of approved electives and encourages concentration in an area of interest. At least one of the elective courses must be CHE. The department offers the Petroleum Engineering Option, which requires PETE 3000, PETE 4010, PETE/CHE 4060, GEOL 4190 or an approved elective. This option will be reflected on the diploma and transcript. In addition, students can elect to concentrate in Biomaterials and Polymers, Biomedical Engineering, Biotechnology, Chemistry, Environmental Engineering, International Engineering, and Math for which elective courses are approved by the department. This concentration will be documented on the transcript. Finally, students can design their own self-directed 12-credit-hour block of electives to reflect individual interests.

Satisfactory progress consists of completing at least 12 credit hours per semester with a 2.0 GPA or better in courses applicable to the chemical engineering degree. Students not making satisfactory progress for two semesters must petition for continuation in the program.

Graduate Programs

The department offers graduate study leading to the Master of Science and Doctor of Philosophy degrees in both chemical and petroleum engineering. Opportunities are available for graduate students to obtain financial assistance by means of scholarships, fellowships and assistantships.

Chemical Engineering Curriculum

Suggested Course Sequence

FRESHMAN YEAR: Fall	Hrs.
ES 1000	1
MATH 2200	4
CHEM 1050	4
ES 1060	3
LIFE 1010	4
PEAC 1001	1
Total Hrs.	17

FRESHMAN YEAR: Spring	Hrs.
US & Wyoming Constitutions.....	3
MATH 2205	4
CHEM 1060	4
PHYS 1210	4
ENGL 1010	3
Total Hrs.	18

SOPHOMORE YEAR: Fall	Hrs.
MATH 2210.....	4
CHEM 2420	4
PHYS 1220.....	4
USP Cultural Context.....	3
Total Hrs.	15

SOPHOMORE YEAR: Spring	Hrs.
CHE 2060	3
MATH 2310.....	3
CHEM 2440.....	4
ES 2310.....	3
ES 2330.....	3
Total Hrs.	16

JUNIOR YEAR: Fall	Hrs.
CHE 3000.....	3
CHE 3015.....	3
CHE 3025	3
CHEM 4507.....	3
Elective	3
Total Hrs.	15

JUNIOR YEAR: Spring	Hrs.
CHE 3030	3
CHE 3040	3
CHE 3070	3
CHEM 2230	4
Elective	3
Total Hrs.	16

SENIOR YEAR: Fall	Hrs.
CHE 4050	2
CHE 4060	3
CHE 4070	3
CHE 4090	3
Cultural context	3
Elective	3
Total Hrs.	17

SENIOR YEAR: Spring	Hrs.
CHE 4080	5
Cultural context	3
Elective	3
Elective	3
Total Hrs.	14

Notes:

- At least one elective must be CHE.
- A minimum of 48 credit hours must be upper division level.
- Cultural Context must meet the following requirements:
 - 1-CH course (Humanities)
 - 1-CS course (Social Sciences)
 - 1-CA course (Arts)
 - with embedded Global Awareness (G) and Cultural Diversity in the US (D) in these courses.
- The ES 2110-Statics/ES 2120-Dynamics sequence can be substituted for Physics I.

Chemical Engineering (CHE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2060. Introduction to Chemical Engineering Computing. 3. Introduces chemical engineering problems, develops computational skills needed to solve them, and reinforces a computational tool that will be useful for other CHE classes. Cross listed with PETE 2060. *Prerequisites:* Grade of C or better in ES 1060 and concurrent enrollment in MATH 2310. (Normally offered spring semester)

3000. Chemical Process Analysis. 3. Introduces analysis of chemical processes using stoichiometry, material and energy balances, thermodynamics and economics. Introduces analysis of safety, health, and environment. *Prerequisite:* ES 2310 or concurrent enrollment. (Normally offered fall semester)

3015 [3010]. Chemical Thermodynamics. 3. Introduces mixture properties, such as chemical potentials, excess properties, partial molar properties, heats of mixing, fugacities, and practical tools for estimating them from solution theories and equations of state. These tools and concepts are applied to phase and chemical equilibria. Cross listed with PETE 3015. *Prerequisite:* ES 2310, CHE 2060. (Normally offered fall semester)

3025 [3020]. Transport Phenomena. 3. Introduces energy and mass transfer concepts and the development of mathematical models of physical phenomena, including convection, diffusion, conduction and radiation, applicable to the analysis and design of chemical processes. Cross listed with PETE 3025. *Prerequisites:* ES 2330 and concurrent enrollment in CHE 3000. (Normally offered fall semester)

3030. Unit Operations. 3. Applies transport and equilibrium concepts and models to the analysis and design of unit operations, such as distillation, absorption, extraction, crystallization, membrane, and heat exchange processes. Cross listed with PETE 3030. *Prerequisites:* CHE 3000, 3015, and 3025. (Normally offered spring semester)

3040. Unit Operations Laboratory I. 3. [W3↔WB] Illustrates fluid-flow and heat-transfer principles with experiments, for example, on pipe flow, fluid viscosity and convective heat transfer. Emphasizes experimental-error analysis and technical communication, both written and oral. *Prerequisite:* WA, CHE 3020. (Normally offered spring semester)

3070. Process Simulation and Economics. 3. Introduces the process simulation software used in the chemical industry and its applications, including examples of heat and material balances, physical properties, phase and chemical equilibria, equilibrium-stage separations and coasts and profitability analysis. *Prerequisites:* concurrent enrollment in CHE 3010 and CHE 3030.

3900. Undergraduate Research. 1-6 (Max. 6). Students carry out research appropriate to undergraduates, under faculty supervision. May be taken more than once. *Prerequisite:* junior standing in chemical engineering. (Normally offered each semester)

4000. Environment, Technology and Society. 3. [C2, G1↔(none)] Explores relationships among technology, the environment and society. Examines social and humanistic aspects of using current and future technology to understand and solve environmental problems. Cross listed with PETE 4000. *Prerequisites:* junior standing and completion of two university studies science courses (SB, SP, SE).

4050. Unit Operations Laboratory II. 2. [W3↔(none)] Illustrates mass-transfer principles with experiments, for example, on extraction, gas absorption, and distillation. Emphasizes experiment planning and technical communication, both written and oral. *Prerequisite:* concurrent enrollment in CHE 3030. (Normally offered fall semester)

4060. Chemical Process Kinetics. 3. Introduces chemical process kinetics, catalysis and reactor design. Includes homogeneous and heterogeneous reaction kinetics; design of batch, stirred-tank and tubular reactors; and nonisothermal operation. *Prerequisites:* CHE 3010 and 3020. (Normally offered fall semester)

4070. Process Design I. 3. Encompasses engineering design of chemical processes. Introduces engineering economics, process safety management and environmental management. *Prerequisites:* CHE 3030, 3070 and 4060 or concurrent enrollment. (Normally offered fall semester)

4080. Process Design II. 5. [(none)↔WC] Intended for the last semester of the senior year. Applies all previous courses to the design of safe, economical and environmentally benign chemical processes. *Prerequisite:* CHE 3040, 4070. (Normally offered spring semester)

4090. Process Dynamics and Control. 3. Encompasses analysis and design control systems for the chemical process industry including steady-state approximation, types of controllers, simple unsteady-state analysis, use of mathematical models and process dynamics under control. *Prerequisites:* CHE 3020, 3030 and 4060. (Normally offered spring semester)

4100. Biochemical Engineering. 3. Applies chemical engineering principles to the analysis and design of biological processes widely used in the pharmaceutical, food and environmental remediation industries. Topics include kinetics of enzyme-catalyzed reactions, cellular growth and metabolism, bioreactor design and mass transfer considerations. Dual listed with CHE 5100. *Prerequisites:* MOLB 2210 or concurrent enrollment and CHE 4060 or concurrent enrollment.

4110. Air Pollution for Chemical Engineers. 3. Focuses on strategies and technologies for complying with air pollution control regula-

tions. Introduces atmospheric mixing and dispersion modeling to describe impact of process air emissions on the environment. Examines chemistries of pollutant production and atmospheric fate of air pollutants. *Prerequisite:* CHE 3000. (Normally offered fall semester)

4160. Biomedical Engineering-Transport Processes. 3. Focuses on chemical and physical transport processes with applications toward the development of drug delivery systems, artificial organs, bioartificial organs and tissue engineering. Involves topics covering body fluids, capillary solute transport, physical and flow properties of blood, tissue oxygen transport, pharmacokinetic models and cell physiology. *Prerequisites:* consent of instructor and grade of C or better in at least three courses counting no more than two from CHEM 1020, CHEM 1030, CHEM 1050, LIFE 1010, LIFE 1020 and at least one from LIFE 2020, MATH 2200, KIN 2040, MOLB 2210, MOLB 2240, CHE 3000, ES 2310.

4170. Polymeric Materials Synthesis. 3. An introduction to the polymer technology, with emphasis on the synthesis of polymeric materials and on the polymerization processes. Applications cover commodity polymers, such as polyolefins and advanced materials, such as nanomaterials, aerospace materials and biomaterials for drug delivery, artificial tissues and organs. *Prerequisite:* CHEM 2340 or 2440.

4190. Polymeric Materials: Characterization and Properties. 3. Intended for science and engineering students, an introduction to the characterization and properties of polymeric materials. Introduces synthesis, architecture, molecular microstructure analysis, molecular weight determination, solution properties, thermal properties and mechanical properties of polymeric materials. Dual listed with CHE 5190. *Prerequisite:* CHEM 4507.

4340. Numerical Analysis. 3. Considers computer methods and their accuracy for applied mathematics. Topics include machine arithmetic, analysis of rounding error, solution methods for linear systems and nonlinear equations, interpolations, numerical differentiation, and numerical solution of differential equations. Includes some programming. *Prerequisites:* grade of C or better in COSC 1010, MATH 2310, and either MATH 2250 or 3310.

4970. Internship in Chemical Engineering. 1-6 (Max. 6). Enables credit for students in appropriate engineering activities while serving as interns in an industrial, government, or other setting. *Prerequisite:* must be involved in a chemical engineering co-op/internship experience.

4990. Topics in Chemical Engineering. 1-6 (Max. 6). Features topics not included in regularly offered classes. Section I is individual study. Other sections are group study by seminar or in class format. *Prerequisite:* CHE 3000 or concurrent enrollment.

Petroleum Engineering

Petroleum Engineering trains students for Wyoming's largest industries, the production of crude oil and gas. With the recognition of the state's and nation's vast reserves of natural gas, the curriculum emphasizes the production and processing of this important resource. Because of American predominance in petroleum technology, career opportunities are available throughout most of the world.

The curriculum in petroleum engineering is based upon sound preparation in fundamental sciences, mathematics, physics, chemistry, and geology. The essentials of engineering are added to this foundation: computer programming, statics, dynamics, materials science, hydraulics, and thermodynamics. To aid in developing individuals' social potential and broaden their educational background, an integrated program in humanities and social sciences is included in the curriculum. Petroleum engineering courses, which are primarily concerned with application of previously acquired knowledge to problems of the oil and gas industry, are concentrated in the junior and senior years.

Students' academic progress in the program is evaluated. Satisfactory progress consists of completing at least 12 credit hours with a 2.00GPA or better in courses applicable to the petroleum engineering degree. Students not making satisfactory progress for two semesters will be required to petition before being allowed to continue in the program. For approved electives, students must have prior approval of their adviser and department head. Courses must be chosen from a list provided by the department.

Graduate Programs

The department offers a program of study leading to the Master of Science and Ph.D. degrees in petroleum engineering. Opportunities are available for graduate students to obtain financial assistance by means of scholarships, fellowships, and assistantships.

Petroleum Engineering Curriculum

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
ES	1000	1
ES	1060	3
CHEM	1020	4
GEOL	1100	4
MATH	2200	4
Total Hrs.		16

FRESHMAN YEAR: Spring		Hrs.
POLS	1000	3
CHEM	1030	4
ES	2110	3
MATH	2205	4
ENGL	1010	3
Total Hrs.		17

SOPHOMORE YEAR: Fall		Hrs.
PHYS	1220	4
MATH	2210	4
ES	2410	3
ES	2120	3
PETE	2050	3
Total Hrs.		17

SOPHOMORE YEAR: Spring		Hrs.
MATH	2310	3
ES	2310	3
ES	2330	3
CHEM	2300	4
PETE	2060	3
Total Hrs.		16

JUNIOR YEAR: Fall		Hrs.
PETE	3100	1
PETE	3255	3
PETE	3265	2
PETE	3015	3
PETE Elective		3
PETE Elective		3
Total Hrs.		17

JUNIOR YEAR: Spring		Hrs.
PETE	3200	3
PETE	3720	3
PETE	3715	3
PETE	4320	3
USP Cultural Context		3
Total Hrs.		15

SENIOR YEAR: Fall		Hrs.
PEAC	1001	1
PETE	4720	3
PETE	4220	2
PETE	4340	3
PETE Elective		3
USP Cultural Context		3
Total Hrs.		15

SENIOR YEAR: Spring		Hrs.
PETE	4730	4
GEOL	4190	3
PETE Elective		3
PETE Elective		3
USP Cultural Context		3
Total Hrs.		16

Petroleum Engineering (PETE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2050 [3000]. Introduction to Petroleum Engineering. 3. General introduction to petroleum engineering, including physical properties of reservoir rock, single phase fluid flow through porous media, surface forces, fluid saturation's, drilling fundamentals, methods of production, completion technology and petroleum reservoir field data. *Prerequisites:* ES 2310; ES 2330 or concurrent enrollment.

2060. Introduction to Petroleum Engineering Computing. 3. Introduces Petroleum Engineering problems and principles, develops computational skills needed to solve them, and reinforces a computational tool that will be useful for other Petroleum Engineering classes. Cross listed with CHE 2060. *Prerequisites:* grade of C or better in ES 1060, concurrent enrollment in MATH 2310. (Normally offered spring semester)

3015 [3010]. Chemical Thermodynamics. 3. Introduces mixture properties, such as chemical potentials, excess properties, partial molar properties, heats of mixing, fugacities, and practical tools for estimating them from solution theories and equations of state. These tools and concepts are applied to phase and chemical equilibria. Cross listed with CHE 3015. *Prerequisite:* ES 2310, CHE 2060. (Normally offered fall semester)

3025 [3020]. Transport Phenomena. 3. Introduces energy and mass transfer concepts and the development of mathematical models of physical phenomena, including convection, diffusion, conduction and radiation, applicable to the analysis and design of chemical processes. Cross listed with CHE 3025. *Prerequisites:* ES 2330 and concurrent enrollment in CHE 3000. (Normally offered fall semester)

3030. Unit Operations. 3. Applies transport and equilibrium concepts and models to the analysis and design of unit operations, such as distillation, absorption, extraction, crystallization, membrane, and heat exchange processes. Cross listed with CHE 3030. *Prerequisites:* CHE 3000, 3020 and ES 2330. (Normally offered spring semester)

3100. Rock and Fluids Lab. 2. Provides understanding of principles of rock and fluid properties and their measurement as part of conventional and special core analysis, as well as PVT characteristics of reservoir fluids. Students are expected to understand how to measure important rock and fluid properties using laboratory equipment, as part of reservoir characterization routines, formation damage evaluations and well log calibration protocols. Students are also expected to learn how to write succinct and organized reports. *Prerequisites:* PETE 2050.

3200 [4010]. Reservoir Mechanics. 3. Examines use of material balance equation. Studies principles of fluid mechanics applied to single and multiphase flow of fluids in porous media and decline curve analysis. *Prerequisite:* PETE 2050. (Normally offered spring semester)

3255. Basic Drilling Engineering. 3. Principles and practices of oil and gas well rotary drilling, including rock mechanics, drilling hydraulics, drilling fluids, and hold deviation. Drilling equipment analysis, casing design, and drilling fluid properties. Application of modern computer-based analysis and design methods. *Prerequisites:* ES 2310, ES 2330, or consent of the instructor.

3265. Drilling Fluids Laboratory. 2. Measurements of physical and chemical properties of drilling fluids and computer simulations of drilling operations. Includes experiments on drilling fluid rheological properties, mud weight, water loss, and gel strength. Filtration at high temperature and pressures. *Prerequisites:* ES 2310, 2330, PETE 3250 (concurrent).

3715. Production Engineering. 3. Provides elements for design and analysis of surface production processes, including fluid separation, pumping and compression, measurement and treatment of production fluids, basic design of artificial lift system, and analysis and optimization of production systems. *Prerequisites:* PETE 2050, ES 2310, ES 2330.

3725. Well Bore Operations. 3. Covers many facets of completion and intervention technology. The material progresses through each of the major design, diagnostic and intervention technologies, ending with effect of operations on surface facilities and finally plug and abandonment requirements. *Prerequisites:* PETE 2050, ES 2410.

3900. Undergraduate Research in Petroleum Engineering. 1-6 (Max. 6). Students carry out research appropriate to undergraduates, under faculty supervision. May be taken more than once. *Prerequisites:* junior standing in petroleum engineering or consent of instructor.

4000. Environment, Technology and Society. 3. [C2, G1] (none) Explores relationships among technology, the environment and society. Studies social and humanistic aspects of using current and future technology to understand and solve environmental problems. Cross listed with CHE 4000. *Prerequisites:* junior standing and completion of two university studies science courses (SB, SP, SE).

4030 [3010]. Rock and Fluid Properties. 3. Reservoir rocks - mineralogy, deposition, diagenesis, porosity, permeability, pore space imaging. Coring and core analysis. Intermolecular forces and fluid properties. Fundamentals of wetting and capillarity. Hydrocarbon distribution. Chemistry of crude oils. Oil-brine-rock interactions, formation damage, reservoir wettability, and oil recovery. *Prerequisite:* PETE 3000. (Normally offered fall semester)

4060 [4220]. Flow Through Porous Media. 3. Review of properties of porous media. Relationships of permeability to porosity. Formulation of Fundamental Flow Equation. Constant Rate Solutions. Constant Pressure Solutions. The Principles of Superposition. Transient well testing of oil and gas reservoirs, including drawdown, build-up, faulted systems, interference, drillstem tests, isochronal test analysis. Dual listed with PETE 5060. *Prerequisite:* PETE 4010. (Normally offered fall semester)

4200. Natural Gas Engineering. 3. Studies development of natural gas reservoirs for normal production and as storage fields. Includes back pressure tests, hydrates, pipeline problems, cycling and use of the material balance equation. Also processing of natural gas, including compression, expansion, refrigeration, separation, sour gas treating, sulphur recovery, LNG production and carbon dioxide separation. *Prerequisites:* PETE 2050. (Normally offered fall semester)

4225. Well Test Analysis. 2. Aims to present the fundamental concepts of well test analysis. The mathematical formulations presented are a critical facet of the methodology used in the interpretation. The formation gathered from the interpretation will help analyze, improve, and forecast the potential of the well and the reservoir. *Prerequisite:* PETE 3200.

4250 [3250]. Drilling Engineering. 3. Principles and practices of rotary drilling, including rock mechanics, hydraulics, drilling fluids and hole deviation. Oil and gas drilling equipment models. Drilling fluid tests, casing design. *Prerequisite:* PETE 3000. (Normally offered fall semester)

4320. Well Log Interpretation. 3. Studies use of various types of open hole logs for quantitative evaluation of formations. *Prerequisites:* PETE 3200. (Normally offered spring semester)

4340. Petroleum Economics. 3. Applies principles of economics to petroleum properties. Studies taxation, present worth, rate of return, payout and decisions under uncertainty. *Prerequisite:* PETE 3200. (Normally offered fall semester)

4720. Petroleum Engineering Design I. 3. [(none)] (WB, O) Design and development of petroleum reservoirs using principles and skills learned in the Petroleum Engineering program. Application of software for design and analysis of the drilling, reservoir and production of petroleum fields. *Prerequisites:* PETE 3030, 3200, 3250 3710 and 3720.

4735. Petroleum Engineering Design II. 4. [(none)] (WC, O) Design and development of petroleum reservoirs using principles and skills learned in the Petroleum Engineering program. Application of software for design and analysis of the drilling, reservoir and production of petroleum. A continuation of PETE 4720. *Prerequisite:* PETE 4720.

4970. Internship in Petroleum Engineering. 1-6 (Max. 6). Enables credit for students in appropriate engineering activities while serving as interns in an industrial, government, or other setting. *Prerequisites:* Must be involved in a petroleum engineering co-op/internship experience; consent of instructor.

4990. Topics in Petroleum Engineering. 1-6 (Max. 6). Features topics not included in regularly offered classes. Section I is individual study. Other sections are group study by seminar or in class format. *Prerequisites:* PETE 3000 or concurrent enrollment.

Department of Civil and Architectural Engineering

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Professors:

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JAY A. PUCKETT, B.S. University of Missouri 1978; M.S. Colorado State University 1980; Ph.D. 1983; Vincent O. Smith Professor of Civil Engineering 2005, 1992, 1983.

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Associate Professors:

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STEPHEN T. GRAY, B.S., University of Tulsa 1994; M.S. 1998; Ph.D. University of Wyoming 2003; Associate Research Scientist, Director of WRDS 2006; State Climatologist 2006.

KEITH E. HEDGES, B.S. University of Illinois 1987; M.S.S.E. Iowa State University 1997; M.Arch. 1997; Academic Professional 2005.

GREG KERR, B.S. University of Wyoming 1975; M.S. 1978; Academic Professional 2002; Director, Office of Water Programs 2005.

LECTURERS:

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Adjunct Faculty:

Bruce Brinkman, William Gorman, Jere Hamilton, Michael Heller, James Kladianos, Duncan Kline

Professors Emeriti:

Leonard B. Baldwin, Jr., Arthur P. Boresi, Robert L. Champlin, K. James Fornstrom, David H. Foster, Victor R. Hasfurther, Michael Humenick, Don Lamb, Anton Munari, Larry O. Pochop, Paul Rechard, James L. Smith, Eugene M. Wilson

Civil Engineering

The civil engineering curriculum begins with a basic education in the physical, engineering, mathematical and computer sciences. This foundation supports further development of engineering topics that prepare the engineer to address critical societal needs. To meet these needs, the civil engineer designs and builds bridges, buildings, dams and hydraulic structures, pipelines and canals, power plants, transportation facilities, sanitary and environmental engineering facilities, surveying and mapping systems, space and ocean platforms, as well as numerous other engineering systems. The civil engineer must also be aware of the social, humanistic, and political aspects of their projects. Therefore, course work in the humanities and social sciences is required to better understand the social aspects of public works. During the last two years of their program, students may pursue several areas of civil engineering or, depending upon their interests, more specialized courses in one or more of the specific technical areas listed below. All students must have a comprehensive design experience.

Civil engineering degree candidates must meet the academic requirements of the college and in addition must have an average GPA of 2.0 (C) in civil and architectural engineering courses attempted at this university.

Structural engineering: Analysis and design of structural systems including buildings, bridges, towers and other structures. Structural engineering also includes the study of solid mechanics and advanced structural materials.

Environmental engineering: Analysis, design and development of engineering systems to provide potable water supplies, treat municipal, industrial and hazardous wastes and protect human health and the environment.

Water resource engineering: Planning, analysis and design of hydraulic and hydrologic systems with respect to watersheds, municipalities, irrigation and drainage, and flood control. Conservation and management of groundwater and surface water are emphasized.

Transportation engineering: Planning, analysis and design of highways, traffic engineering and control, traffic safety, pavement maintenance, design and rehabilitation, and airports and air transportation.

Geotechnical engineering: Design and analysis of foundations, dams, embankments, slope stability and construction practices in soil and rock.

The civil engineering curriculum prepares the graduate to engage in professional practice, and upon completion of post-graduate requirements, to obtain registration as a Professional Engineer. It also provides the graduate with an excellent preparation for graduate studies in engineering, business or law.

Graduate Programs

An advanced degree in civil engineering is professionally and economically attractive. Advanced degrees are important for professional civil engineers in many specialized areas of civil engineering. Many consulting firms and industrial design groups require advanced knowledge gained from graduate studies. Engineers in such firms often work at the forefront of their profession. UW Alumni are involved in design and construction of major projects worldwide.

An advanced degree is also required for careers in university teaching and research. A university career is highly recommended for those motivated students who are interested in becoming leaders in education and in the development of new concepts, processes and inventions.

The Department of Civil and Architectural Engineering offers graduate work leading to a Master of Science and a Doctor of Philosophy degree in civil engineering. A Master of Science in environmental engineering is offered in cooperation with the Chemical and Petroleum Engineering Department.

International Engineering Option

Engineering is a global profession and today's engineers must be able to work and interact in a variety of diverse cultural and technical environments. The international engineering option gives civil engineering students an opportunity to study culture and foreign language at the same time as they pursue their engineering degrees.

The option includes at least one semester of study abroad with courses taken in a foreign language. In addition, students may participate in a four-to-five month international internship. Foreign language skills can be earned through

a variety of means, including formal university coursework, intensive summer language programs, and previous education.

Foreign language education and the study-abroad experience satisfy the cultural context requirements of the University Studies Program.

**Civil Engineering Curriculum⁴
Suggested Course Sequence**

FRESHMAN YEAR: Fall		Hrs.
MATH 2200	.....	4
CHEM 1020	.....	4
ES 1000	.....	1
ES 1060	.....	3
ENGL 1010	.....	3
PEAC 1001	.....	1
Total Hrs.		16

FRESHMAN YEAR: Spring		Hrs.
MATH 2205	.....	4
Science Elective ³	.....	4
US and WY Constitutions ¹	.....	3
University Studies [(CH, CS, CA)/C, O] ²	.....	3
ES 2110	.....	3
Total Hrs.		17

SOPHOMORE YEAR: Fall		Hrs.
MATH 2210	.....	4
ES 2410	.....	3
ES 2120	.....	3
CE 2070	.....	3
University Studies [(CH, CS, CA)/C, O] ²	.....	3
Total Hrs.		16

SOPHOMORE YEAR: Spring		Hrs.
MATH 2310	.....	3
PHYS 1220	.....	4
ES 2310	.....	3
ES 2330	.....	3
CE 2100	.....	3
Total Hrs.		16

JUNIOR YEAR: Fall		Hrs.
STAT 4220	.....	3
Select four (4) from CE 3100, 3200		
3210, 3300, 3400, 3500		
3600, 3900	.....	12
University Studies [(CH, CS, CA)/C, O] ²	.....	3
Total Hrs.		18

JUNIOR YEAR: Spring		Hrs.
Math/Science/Technical Electives ³	.....	3
Select four (4) from CE 3100, 3200		
3210, 3300, 3400, 3500		
3600, 3900	.....	12
Total Hrs.		15

SENIOR YEAR: Fall		Hrs.
CE 4260	.....	3
ENGL 4010	.....	3
Math/Science/Technical electives ³	.....	5
Professional development electives ³	.....	6
Total Hrs.		17

SENIOR YEAR: Spring		Hrs.
Math/Science/Technical electives ³	.....	5
Professional development electives ³	.....	9
University Studies [(CH, CS, CA)/C, O] ²	.....	3
Total Hrs.		17

¹ECON 1200, HIST 1211, HIST 1221, HIST 1251, POLS 1000, or other approved V course.

²Elective selection is governed by the approved list in effect when the course is taken. Cultural Context courses [CH/C, CS/C, CA/C] selected must meet University Studies requirements. Requirements for Global Studies [G], Writing [WB], and Diversity [D] may be satisfied concurrently with Cultural Context requirements if an appropriate selection of courses is made. Consult your academic adviser for further information.

³To be selected from appropriate department-approved lists.

⁴All civil and architectural engineering classes require a grade of C or better in prerequisite courses.

International Engineering Option Curriculum

FRESHMAN YEAR: Fall		Hrs.
MATH 2200	.....	4
CHEM 1020	.....	4
ES 1000	.....	1
ES 1060	.....	3
ENGL 1010	.....	3
Total Hrs.		15

FRESHMAN YEAR: Spring		Hrs.
MATH 2205	.....	4
Science Elective [*]	4
PEAC 1001	.....	1
US and WY Constitutions	.....	3
ES 2110	.....	3
Total Hrs.		15

SUMMER AFTER FRESHMAN YEAR		
First-year foreign language I	.....	4
First-year foreign language II	.....	4
Total Hrs.		8

SOPHOMORE YEAR: Fall		Hrs.
MATH 2210	.....	4
CE 2070	.....	3
ES 2120	.....	3
PHYS 1220	.....	4
Second-year foreign language I	.....	4
Total Hrs.		18

SOPHOMORE YEAR: Spring		Hrs.
MATH 2310	.....	3
ES 2310	.....	3
CE 2100	.....	3
ES 2410	.....	3
Math/Science Technical Elective [*]	3
Second-year foreign language II	.....	3
Total Hrs.		18

SUMMER AFTER SOPHOMORE YR		
CE 3900	.....	3
ES 2330	.....	3
Total Hrs.		6

JUNIOR YEAR: Study Abroad		Hrs.
CE 3100	.....	3
CE 3200	.....	3
CE 3300	.....	3
CE 3400	.....	3
Total Hrs.		12

JUNIOR YEAR: Internship		Hrs.
International internship	.....	3
ENGL 4010	.....	3
Total Hrs.		6

SENIOR YEAR: Fall		Hrs.
STAT 4220	.....	3
CE 3210	.....	3
CE 3500	.....	3
CE 3600	.....	3
Math/Science/Technical electives [*]	3
CE 4260	.....	3
Total Hrs.		18

SENIOR YEAR: Spring		Hrs.
Math/Science/Tech Electives [*]	2
Prof Development Electives [*]	12
CE 4900	.....	2
Total Hrs.		16

^{*}To be selected from the appropriate departmentally approved lists.

Civil Engineering (CE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2070. Engineering Surveying. 3. Principles of measurements of distances, elevation and angles. Basic error theory in measurement and calculations. Traverse field techniques and office calculations. Basic principles of surveying and map making. *Prerequisite:* significant surveying experience or ES 1060. (Normally offered fall semester)

2074. Ethics for the Professional Surveyor. 1. Introduction to the common ethical and moral issues facing professional surveyors in modern practice. *Prerequisite:* CE 2070.

2080. Public Land Surveys I. 1. Covers historical factors that lead to the Public Land Survey System (PLSS). Basic fundamentals are discussed, including line types, corner types, and the original survey process. Principles of government dependent and independent resurveys and the basic keys to reading General Land Office and BLM survey plats are also discussed. *Prerequisite:* CE 2070.

2082. Public Land Surveys II. 1. Discusses "bono fide rights" and riparian boundaries in the PLSS. Presents the non-rectangular entities, the process for section subdivision, including normal, fractional, lotted closing corners, and sections lotted for irregularities found in a dependent survey, and the proper use of off-line closing corners. *Prerequisite:* CE 2080.

2084. Public Land Surveys III. 1. Covers the importance of and process for records research. Discussion leads into the analysis of corner evidence on the ground, and restoring lost corners after years of deterioration and neglect. Also discusses the role of the present day surveyor in the PLSS and what types of complexities that will be faced. *Prerequisite:* CE 2082.

2086. Advanced Public Land Surveys. 3. Advanced topics in situations and problems in the Public Land Survey system, with discussion of major court cases involving everyday applications to surveyors. 1975 BLM casebook and other sources of survey reference. *Prerequisite:* CE 2084, or CE 3740.

2088. Writing Land Descriptions. 2. Historical and current issues for land description writing and usage for the practicing surveyor. Relationship between written descriptions and field survey data, interpreting old descriptions and the structure principles of description. *Prerequisite:* CE 2070.

2090. GPS for Surveyors. 4. Practical applications point of view regarding the use of GPS technology for land survey projects utilizing actual GPS survey data from US government Cadastral Survey in a wide variety of conditions and applications. Topics include fundamentals of GPS, geodesy, project planning, survey techniques, field procedures, data processing and evaluation, network adjustment, and an overview of Realtime Kinematic survey techniques for Cadastral Surveys. *Prerequisite:* CE 2070.

2100. Civil Engineering Systems. 3. The practice of civil engineering is used as a model to introduce how the different areas of civil engineering are interested. Uses examples from several civil engineering projects to introduce computer-aided drafting and design. *Prerequisites:* CE 2070 (or concurrent) and ES 2410 (or concurrent).

3100. Civil and Architectural Engineering Practice. 3. Civil and architectural engineering practice from project inception through construction documentation. Topics include: codes, marketing, specifications, budgeting, contracts, subcontracting, registration, construction planning, scheduling, bidding, liability, insurance, and bonding. Cross listed with ARE 3100. *Prerequisites:* junior standing in CE or ARE.

3200. Structural Analysis I. 3. Introductory design and analysis topics in loads on building, stress and displacement analysis of structures, including beams, trusses and frames, classical flexibility and stiffness methods. Cross listed with ARE 3200. *Prerequisite:* ES 2410.

3210 [2210]. Civil Engineering Materials. 3. [(none)WB] Laboratory investigation and design of materials used in civil engineering: metals, masonry, concrete and timber. Non-destructive evaluation of materials. Analysis and presentation of data, including various types of written reports and oral presentations. Cross listed with ARE 3210. *Prerequisites:* WA and ES 2410.

3300 [4320]. Hydraulic Engineering. 3. Develops analysis, design and modeling techniques for incompressible pipe flow, steady uniform and gradually varied open channel flow, and hydraulic structures. *Prerequisite:* ES 2330.

3400. Introduction to Environmental Engineering. 3. An introduction to the major topics in environmental engineering. Focus areas include water supply, wastewater treatment, air pollution control and solid and hazardous waste management. Quantitative aspects and engineering solutions to problems are emphasized. *Prerequisites:* MATH 2205 and CHEM 1020 or equivalent.

3500 [4500]. Transportation Engineering. 3. Introduction to the major topics in Transportation Engineering. Focus areas include roadway and non-motorized facility design, traffic operations, transportation planning, and pavement materials and design. *Prerequisite:* junior standing in engineering.

3600 [4600]. Soil Mechanics I. 3. A study of soil and the properties which influence its usefulness as an engineering material. Principles governing movement of soil, water and propagation of stresses through soil masses are studied. *Prerequisite:* ES 2410.

3710 [4710]. Route Surveying. 3. Principles of route location and design. The theory of circular, parabolic and spiral curves; highway and railway geometric design; area and volumes of earthwork; and mass diagrams. *Prerequisite:* CE 2070 or equivalent. (Normally offered spring semester)

3720 [4720]. Advanced Surveying. 4. Advanced topics in surveying computations and procedures, including traverse error analysis, topographic surveying, mapping, astronomical observations, coordinate geometry applications, introduction to geodesy, state plane coordinates and concepts of least squares analysis of survey adjustments. *Prerequisite:* CE 2070 or equivalent. (Normally offered spring semester)

3740. Survey Boundary Control and Legal Principles. 2. This course in boundary law addresses the fundamental principles of real property as applied to land surveying and related professions. Discussion and applications center on practical situations and concepts commonly encountered while conducting boundary surveys and the determination of the extent of ownership rights. Students explore the scope of the surveyors' judiciary role in real property ownership. Primarily offered through the Outreach School. *Prerequisite:* CE 2070 or equivalent.

3750. Surveying Evidence and Procedures for Boundary Location. 2. A practical and working guide to understanding survey evidence and the laws of boundary location for efficient, accurate boundary determination. This material aids in the elimination of errors in location of land boundaries. The surveyor's liability and statutes of limitations are explored in depth. Also included are discussions of the surveyor's role in court. Normally offered only through the Outreach School. *Prerequisite:* CE 2070 or equivalent.

3900 [4900]. Engineering Economics and Professional Ethics. 3. A study of decision making based on economic criteria. Includes time value of money, present value, annual value

and rate of return methods; incremental graphics, depreciation methods, income tax evaluations; replacement and sensitivity analysis; and governmental financing. A review of social and professional ethics. Includes the engineer in society, business and profession with case studies of professional responsibility and ethics decisions. *Prerequisite:* junior standing.

4100. Civil Engineering Applications in GIS. 3. Concepts of Geographic Information Systems, the methods and software used to implement them, and their applications to solve civil engineering problems. *Prerequisites:* CE 2070 and senior standing.

4200. Structural Analysis II. 3. Stress and displacement of indeterminate structures. Determination of loads on buildings. Matrix stiffness methods. Cross listed with ARE 4200 *Prerequisite:* ARE/CE 3200.

4250. Structural Steel Design. 3. Design of structural components and applications utilizing steel. Cross listed with ARE 4250. *Prerequisite:* ARE/CE 4200 or concurrent enrollment.

4260. Structural Concrete Design. 3. Design of structural components and applications utilizing reinforced concrete. Cross listed with ARE 4260. *Prerequisite:* ARE/CE 3200.

4280. Reinforced Masonry Design. 3. Design of structural components in reinforced masonry buildings, including walls, columns, beams and connections. Particular attention is paid to current codes, specifications and analysis. Cross listed with ARE 4280. *Prerequisites:* ARE/CE 4260 and concurrent enrollment in ARE/CE 4200. (Normally offered fall semester)

4290. Structural Timber Design. 3. Design of structural components and applications utilizing timber. Cross listed with ARE 4290. *Prerequisite:* CE 4200 or concurrent enrollment. (Normally offered spring semester)

4350 [4810]. Design of Hydraulic Engineering Systems. 3. For seniors and graduate students in civil engineering who desire to learn design of municipal water distribution and wastewater collection (storm and sanitary) systems by combining principles from hydraulics, hydrology and environmental engineering course work into an integrated design approach. *Prerequisite:* CE 3300. (Normally offered spring semester)

4400. Design of Water Treatment Facilities. 3. A theoretical and practical design course for municipal potable water treatment systems. Major emphasis includes health criteria, operational control procedures, primary and secondary drinking water regulations, as well as the latest treatment design standards for production of drinking water. *Prerequisite:* CE 3400.

4410. Design of Wastewater Treatment Facilities. 3. A theoretical and practical design course for treatment of municipal wastewaters. Major areas of emphasis include waste characterization and physical, chemical and biological unit processes. *Prerequisite:* CE 3400.

4430 [3420, 2420]. Environmental Engineering Chemistry. 3. Focus includes inorganic, organic, physical, equilibrium, biochemistry, colloidal and nuclear chemistry with an emphasis on the problems/solutions encountered by environmental and civil engineers. *Prerequisites:* CHEM 1020.

4440. Solid Waste Engineering. 3. Municipal solid waste collection, treatment and ultimate disposal are covered. Engineering design of landfills, incinerators, composting, recycling and reuse, as well as other solid waste management systems are included. *Prerequisites:* CHEM 1020 and CE 3400.

4510 [5510]. Pavement Design for Airports and Highways. 3. Designing flexible and rigid pavements for highways and airports. Topics include pavement materials and common uses, soil stabilization, quality control of materials, pavement design procedures. Dual listed with CE 5510. *Prerequisite:* CE 3500 or 3600.

4555 [4520]. Geometric Design of Highways. 3. Criteria controlling geometric design of highways including design speed, design volume, vehicle requirements and capacity design standards for different highway types; design of sight distance, alignment, grade; cross-section design; access control, frontage roads; intersection design elements, and design of intersections and interchanges. Students may not receive credit for both CE 4555 and CE 5555. Dual listed with CE 5555. *Prerequisite:* CE 3500.

4610 [5610]. Foundation Engineering. 3. Site characterization and soil properties. Includes bearing capacity, stress distribution, settlement. Design of shallow and deep foundations. *Prerequisite:* CE 3600. (Normally offered fall semester)

4620. Soil and Rock Slope Engineering. 3. Covers the topic of engineered slopes for civil infrastructure. Topics include engineering and geologic classification of landslides; field investigations; soil and rock strength properties for stability analysis; analytical and numerical methods for analysis of slope stability; design of engineered stabilization systems. *Prerequisites:* CE 3600.

4630. Geotechnical Engineering. 3. Covers topics in design and analysis of soil site investigation and construction, such as instrumentation, soil improvement, water control and remedial measures. *Prerequisite:* CE 3600. (Offered every third semester)

4800. Hydrology. 3. Analysis of elements of the hydrologic cycle and design with emphasis on precipitation, evapotranspiration, infiltration, runoff and groundwater. Precipitation/Runoff relationships, routing methods, flood prediction, groundwater yield and drawdown in unconfined and confined aquifers, unsteady well behavior, and method of images are also introduced. *Prerequisite:* CE 3300. (Normally offered fall semester)

4820 [AGRE 4200]. Groundwater and Drainage Engineering. 3. Principles and basic equations associated with saturated and unsaturated flow in soils describing groundwater and drainage flow will be developed. Design and analysis of surface and subsurface drainage systems will occur for steady and transient flow. *Prerequisite:* ES 2330. (Offered once every three semesters)

4900. Comprehensive Design Experience in: _____, 1-4 (Max. 4). Concentrated, comprehensive design course focusing on one or more subdisciplines within civil engineering. See your departmental adviser for further information and requirements. *Prerequisites:* senior standing in civil engineering; concurrent enrollment in the designated companion course.

4920. Senior Civil Engineering Problems. 1-3 (Max. 6). A study of current engineering problems that are applicable to civil engineering either on an individual basis or for small seminar type groups. *Prerequisite:* senior standing or approval of department head. (Offered fall, spring and summer)

4970. Wyoming D.O.T. Design Squad Cooperative Experience. 3. Experience with Wyoming Department of Transportation design procedures and fundamentals. Participation in development of design documents used to construct actual projects. Offered S/U Only. *Prerequisites:* selection for Laramie Design Squad employment and consent of department head. (Offered fall, spring and summer)

4975. Civil and Architectural Engineering Internship. 1-3 (Max. 3). Students who receive progressive engineering during an extended work period (>30 weeks) may present a proposal for internship work one month prior to the end of the semester before the experience. Application may be approved by CE/ARE curriculum committee prior to start. Completion report will determine hours of pass/fail approved. *Prerequisite:* junior standing.

All 5000-level courses are listed in the Graduate Bulletin and may be taken by undergraduate students with instructor consent.

Architectural Engineering

Architectural Engineering is a rapidly expanding profession that deals with the myriad aspects of buildings and their design, construction and operation. Architectural engineers are typically specialists, responsible for the design and integration of such building elements as the structural, plumbing, fire protection, heating and air conditioning, or lighting and electrical systems. The curriculum in architectural engineering is designed to acquaint students with the various aspects of building design and construction and exposes them to a variety of courses dealing with different building materials and systems. The curriculum also includes course work in the humanities and social sciences, both to enrich the student's academic experience and assist in dealing with and contributing to society. The program leads to a Bachelor of Science in Architectural Engineering, preparing graduates to engage in practice as Professional Engineers upon completion of post-graduate registration requirements. Graduate work with emphasis in Architectural Engineering leading to a Master of Science and Doctor of Philosophy degree is offered through the Civil and Mechanical Engineering Program. Additionally, advanced study can also be pursued in allied areas such as architecture, business or other engineering fields.

Students choose an area of emphasis in either structural or mechanical systems and select courses from approved electives, usually beginning their elective sequence in the second semester of their junior year. Consult with the Civil and Architectural Engineering Department for current elective lists.

Architectural engineering degree candidates must meet the academic requirements of the college and in addition must have an average GPA of 2.0 (C) in civil and architectural engineering courses attempted at this university.

Architectural Engineering Curriculum³

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
ES 1000	.....	1
MATH 2200	.....	4
CHEM 1020	.....	4
ES 1060	.....	3
ENGL 1010	.....	3
Physical education	.....	1
Total Hrs.		16
FRESHMAN YEAR: Spring		Hrs.
US and WY Constitutions	.....	3
MATH 2205	.....	4
PHYS 1210	.....	4
Cultural context ¹	.....	3
ES 2110	.....	3
Total Hrs.		17
SOPHOMORE YEAR: Fall		Hrs.
MATH 2210	.....	4
CE 2070	.....	3
ARE 2100	.....	3
ES 2410	.....	3
ES 2120	.....	3
Total Hrs.		16
SOPHOMORE YEAR: Spring		Hrs.
MATH 2310	.....	3
GEOL 1100	.....	4
ES 2310	.....	3
ARE 2200	.....	3
ARE 2410	.....	3
Total Hrs.		16
JUNIOR YEAR: Fall		Hrs.
ES 2330	.....	3
ARE 3030	.....	3
ARE 3200	.....	3
ARE 3400	.....	3
ARE 3600	.....	3
Math/Science Elective	.....	3
Total Hrs.		18
JUNIOR YEAR: Spring		Hrs.
CE 3900	.....	3
ES 2210	.....	3
Option electives ²	.....	9
Cultural context ¹	.....	3
Total Hrs.		18
SENIOR YEAR: Fall		Hrs.
ARE 4600	.....	3
ARE 3100	.....	3
STAT 4220	.....	3
Option electives ²	.....	6
Total Hrs.		15
SENIOR YEAR: Spring		Hrs.
ENGL 4010	.....	3
Option electives ²	.....	10
Cultural context ¹	.....	3
Total Hrs.		16

¹Must meet 2003 University Studies Program requirements.

²To be selected from appropriate departmentally approved list for specific structural or mechanical option courses.

³All civil and architectural engineering classes require a grade of C or better in prerequisite courses.

Architectural Engineering (ARE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2100. Architectural Engineering Graphics. 3. Introduction to architectural drafting basics, including computer-aided drafting, architectural presentation drawings, freehand sketching, essentials of architectural design and building code compliance. *Prerequisite:* ES 1060.

2200. Building Materials and Construction Methods. 3. The study of nomenclature of construction as applied to dwelling and commercial buildings, including selection of appropriate building methods and materials. *Prerequisite:* ARE 2100 or concurrent enrollment.

2400 [2210]. Plumbing and Electrical Systems. 3. Qualitative study and design of basic plumbing and electrical systems used in buildings. *Prerequisite:* ARE 2200 or concurrent enrollment.

2410. Fundamentals of Building Performance. 3. Introduction to building performance measures that embrace a global notion of environmental stewardship. Emphasis on passive heating and cooling systems and daylighting strategies to manage the thermal and luminous environments over the facility life cycle. *Prerequisite:* ARE 2200 or concurrent enrollment.

3030. History of Architecture. 3. [(none)↔CH, G] A survey of the history of architecture and its allied fields, focusing on the formal, aesthetic, cultural and socio-political dimensions, from prehistory to the present. *Prerequisites:* WA.

3100. Civil and Architectural Engineering Practice. 3. Civil and architectural engineering practice from project inception through construction documentation. Topics include: codes, marketing, specifications, budgeting, contracts, subcontracting, registration, construction planning, scheduling bidding, liability, insurance, and bonding. Cross listed with CE 3100. *Prerequisites:* junior standing in CE or ARE.

3200. Structural Analysis I. 3. Introductory design and analysis topics in stress and displacement analysis of structures, including beams, trusses and frames, classical flexibility and stiffness methods. Cross listed with CE 3200. *Prerequisite:* ES 2410.

3210. Civil Engineering Materials. 3. [(none)↔WB] Laboratory investigation and design of materials used in civil engineering: metals, masonry, concrete and timber. Non-destructive evaluation of materials. Analysis and presenta-

tion of data, including various types of written reports and oral presentations. Cross listed with CE 3210. *Prerequisites:* WA and ES 2410.

3340 [3510]. Building Electrical Systems. 3. Design and application of electrical power and lighting systems used in buildings with an emphasis on lighting design, power design, circuiting and fault current calculations. *Prerequisite:* ARE 2400. (Normally offered alternate fall semesters)

3360 [3430, 4420]. Fundamentals of Transport Phenomena. 3. Basic concepts of heat and mass transfer and their applications to problems involving engineering analysis and design. Topics include steady-state and transient conduction, free and forced convection (heat and mass), radiation and heat exchangers. Cross listed with ESE/ME 3360. *Prerequisites:* MATH 2310, ES 2310 and ES 2330. (Offered both semesters)

3400 [3800]. Heating, Ventilating and Air Conditioning of Buildings. 3. Qualitative and quantitative study in concepts of basic air-conditioning with focus on buildings including building envelope, moist air thermodynamics, human comfort, thermal load calculations, thermal behavior of buildings, HVAC systems/equipment, and design of space air-conditioning and its relationship to architectural design. Cross listed with ME 3400. *Prerequisites:* ES 2310.

3600. Architectural Design I. 3. Introduction to the process of architectural design through the completion of several projects, including residential, commercial and institutional architecture. *Prerequisite:* ARE 2200 and junior standing in architectural engineering.

4200. Structural Analysis II. 3. Stress and displacement of indeterminate structures. Determination of loads on buildings. Matrix stiffness methods. Cross listed with CE 4200 *Prerequisite:* ARE/CE 3200.

4250. Structural Steel Design. 3. Design of structural components and applications utilizing steel. Cross listed with CE 4250. *Prerequisite:* ARE/CE 4200 or concurrent enrollment.

4260. Structural Concrete Design. 3. Design of structural components and systems using reinforced concrete. Cross listed with CE 4260. *Prerequisite:* ARE/CE 3200.

4280. Reinforced Masonry Design. 3. Design of structural components in reinforced masonry buildings, including walls, columns, beams and connections. Particular attention is paid to current codes, specifications and analysis. Cross listed with CE 4280. *Prerequisite:* ARE/CE 4260 and concurrent enrollment in ARE/CE 4200. (Normally offered fall semester)

4290. Structural Timber Design. 3. Design of structural components and systems utilizing timber. Particular attention is paid to current codes, specifications and analysis. Cross listed with CE 4290. *Prerequisite:* CE 4200 or concurrent enrollment. (Normally offered spring semester)

4430 [3420, 4810]. HVAC System Analysis.

3. Engineering design and performance analysis procedures for commercial building mechanical systems including energy conservation techniques. Relationship to aesthetic, architectural and structural elements are considered. Cross listed with ME 4430. *Prerequisites:* ARE 3400 and ARE/ME 3360 or concurrent. (Normally offered alternate spring semesters)

4440 [3500]. Building Acoustics. 3. A study of the acoustical environment of buildings, including basic theory with an emphasis on room acoustics and mechanical system noise and vibration. *Prerequisite:* ARE 3400. (Normally offered alternate fall semesters)

4470. Alternative Energy Sources and Applications. 3. An introduction to energy conversion systems likely to become significant sources of energy in the coming decades is presented. Some specific areas that will be discussed include existing energy demands and policy, origin of energy, wind, solar, biomass, and nuclear energy, and energy storage. This course is typically offered every 3rd semester. Cross listed with ME 4470. *Prerequisite:* ME 3360/ARE 3360.

4480. Building Air and Hydronic Systems. 3. Design and analysis of building air and hydronic systems with focus on the application, design and analysis of thermal energy distribution systems (air and hydronic systems) for building space air conditioning. Requires enrollment in associated laboratory session. Cross listed with ME 4480. *Prerequisite:* ARE/ME 4430.

4490. Modeling and Optimization of Energy Systems. 3. Application of principles of thermodynamics, fluids, and heat and mass transfer in the component and system-level design of energy/thermal systems, including modeling, simulation and optimization techniques. Examples are drawn from building environmental control, energy conversion and thermal industrial processes. Students work on projects for integration of these components in the design of energy/thermal systems. Requires enrollment in associated laboratory session. Cross listed with ME 4490. *Prerequisites:* ARE/ME 3360 and 3400.

4600. Architectural Design II. 3. Continuation of concepts introduced in ARE 3600 with more emphasis on larger and more complex building types and systems. *Prerequisite:* ARE 3600 and senior standing in Architectural Engineering.

4720. Structural Systems Design Project. 4. Final course in the building structural systems sequence incorporating elements of previous design courses by executing design of a hypothetical building with a concentration on a detailed design of the project's structural systems. *Prerequisites:* ARE 4200, 4250, 4260, and 4600.

4740. Mechanical Systems Design Project. 4. Final course in the building mechanical systems sequence incorporating elements of previous design courses by executing design of

a hypothetical building with a concentration on a detailed design of the project's mechanical systems. *Prerequisites:* ARE/ME 4480, 4490, and ARE 4600.

4920. Senior Architectural Engineering Problems 1-3 (Max. 6). A study of current engineering design problems that are applicable to architectural engineering either on an individual basis or for small seminar type groups. Not for graduate credit. *Prerequisite:* senior standing or consent of department head.

Department of Computer Science

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Associate Professors:

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LIQIANG WANG, B.S. Hebei Normal University 1995; M.Eng. Sichuan University 1998; M.S. SUNY Stony Brook 2003; Ph.D. 2006; Assistant Professor of Computer Science 2006.

Lecturers:

Anderson, Buckner, Ward

Professor Emeritus:

Henry R. Bauer III

Lecturer Emeritus:

Jeri R. Hanly

Over the past 50 years computers have developed from a novelty with a few technical numerical applications to a ubiquitous tool, essential to science and technology, to business and finance, to government, to communications, and even to entertainment. Computer Science has grown from a specialization in mathematics or business or electrical engineering to an independent, broadly based area of study covering all aspects of the use and understanding of computers and the computation process.

Computer Science education concentrates on the creation and understanding of computer software. The curriculum focuses first on programming and then on the central processes that support programming: operating systems, programming languages, and computational theory. The program of study culminates with a senior design project that produces a working program for a real world problem.

Computers and Business Option

An understanding of business fundamentals is essential for students planning a career in applied computer science in a business environment. This program of study provides a foundation in computer science, business and information management. It includes courses in accounting, management, marketing, database fundamentals, and design and implementation of software systems. The curriculum leads to the Bachelor of Science in Computer Science degree.

International Engineering Option

Computer science is a global profession and today's computer scientists must be able to work and interact in a variety of diverse cultural and technical environments. The international engineering option gives computer science students an opportunity to study culture and foreign language at the same time as they pursue their computer science degrees.

The option includes at least one semester of study abroad with courses taken in a foreign language. In addition, students may participate in a four-to-five month international internship. Foreign language skills can be earned through a variety of means, including formal university coursework, intensive summer language programs, and previous education.

Foreign language education and the study-abroad experience satisfy the cultural context requirements of the University Studies Program. The curriculum leads to the Bachelor of Science in Computer Science degree.

Educational Objectives

The computer science program prepares students to:

- Apply the fundamentals of computer science to solve software-oriented computing problems
- Communicate effectively within and outside the discipline

- Extend their knowledge by independent learning and continuing education
- Appreciate the role of computer science in the societal context and appreciate the importance of ethics in the practice of the profession
- Work effectively with others

Program Learning Outcomes

We expect that our graduating students will have:

- The ability to utilize operating systems and software tools that are similar to those used in the computing profession
- Proficiency in the use of modern and widespread programming languages
- The ability to be competitive in securing entry-level software and computer systems jobs
- The capability to analyze, design, and implement software projects comparable to those found in industry
- The ability to describe, and be proficient in, the application of important computer science concepts
- Written, oral, and visual presentation skills
- An understanding of ethics, professionalism, and the role of computer scientists in society
- An understanding of the benefits and skills necessary to engage in independent learning
- Skills to independently learn new computer science material and identify available resources for additional assistance
- The ability to be effective team members
- High educational and work quality standards

Graduate Program

For details of the M.S. and Ph.D. requirements, see the *Graduate Bulletin*.

Computer Science Undergraduate Major

The computer science requirements are subject to minor program changes. The published curricula are general guides. Students should consult the department Web pages (www.cs.uwyo.edu) for current information.

Students must complete ENGL 1010, 4010; COSC 1010, 1030, 2030, 2150, 2300, 3011, 3015, 3020, 3050, 4950, 4955, theory course: 4100 or 4200, operating systems course: 4740, programming language course: 4780 or 4785, system course: 4820 or 4760; and 12 semester hours of COSC courses at the 3000+ level that are not fulfilling another requirement. Three hours can be from the Computer Engineering [CPEN] electives.

The science requirement is PHYS 1210 and 1220, or 1310 and 1320, or LIFE 1010 and 2022 or 2023 or 2210, or CHEM 1020 and 1030; two additional courses from among ASTR 2310, LIFE 1010, 2022 or 2023 or 2210, CHEM 1020, 1030, 1050, ES 2110, 2120, GEOL 1100, 1200, 2000, PHYS 1210, 1220, 1310, 1320, 2310, EE 2390.

The mathematics requirement is MATH 2200, 2205, STAT 4220 and six semester hours selected from among MATH 2210, or higher numbered courses, COSC 4340 or STAT 3000- or 4000-level courses, except for MATH 2350, 2355, 4000 and variable-credit courses. Recommend: MATH 2250 and 3500.

The foreign language requirements is two semesters of a single foreign language (or one semester at the 2nd or 3rd-semester level), American Sign Language, or satisfactory score on one of the following; Departmental Examination, College Level Examination Program, Advanced Placement Examination. Refer to languages department section in this bulletin for detailed information.

In addition to the required courses listed above, students must choose courses that complete satisfaction of the following University Studies Program requirements: Writing 1 (WA), Writing 2 (WB), Writing 3 (WC), three cultural context courses (CH, CS, CA), oral communications (O), U.S. and Wyoming Constitutions requirement (V), Global Awareness (G), Information Literacy (L), U.S. Diversity (D), Intellectual Community (I) and Physical Activity (P).

Additional requirements: 6 upper-division hours in non COSC courses (UDNC). All COSC, MATH, and STAT courses must have a grade of C or better. The student's program must fulfill the university requirement of 48 semester credit hours in upper division (junior/senior) or graduate-level courses.

Suggested B.S. Program in Computer Science

Course Sequence of Major requirements

Students are free to satisfy program requirements in any order that complies with course prerequisites.

FRESHMAN YEAR: Fall	Hrs.
ES 1000	1
COSC 1010	4
MATH 2200	4
ENGL 1010	3
Science I	4

FRESHMAN YEAR: Spring	Hrs.
COSC 1030	4
MATH 2205	4
Science II	4
USP O Course	3
PEAC 1001	1

SOPHOMORE YEAR: Fall	Hrs.
COSC 2150	3
COSC 2030	4
COSC 2300	3
Foreign Language I	4
USP Cultural Context	3

SOPHOMORE YEAR: Spring	Hrs.
COSC 3011	4
COSC 3020	3
Math Elective	3
Foreign Language II	4
USP Cultural Context	3

JUNIOR YEAR: Fall	Hrs.
COSC 3015	3
Operating Systems Course	3
COSC Elective	3
Science Elective	4
USP V Course	3

JUNIOR YEAR: Spring	Hrs.
COSC Elective	4
COSC 3050	1
Science Elective	4
Math Elective	3
USP Cultural Context	3

SENIOR YEAR: Fall	Hrs.
COSC 4950	1
System Course	3
STAT 4220	3
Theory Course	3
ENGL 4010	3
UDNC	3

SENIOR YEAR: Spring	Hrs.
COSC 4955	2
COSC Electives	6
Programming Language Course	3
UDNC	3

Computer Science Business Option Undergraduate Major

The computer science business option requirements are subject to minor program changes. The published curricula are general guides. Students should consult the department Web pages (www.cs.uwyo.edu) for current information.

Students must complete ENGL 1010, 4010; COSC 1010, 1030, 2030, 2150, 2300, 3011, 3020, 3050, 4210, 4220, 4950, 4955, system course: 4820 or 4760; and 9 semester hours of COSC courses at 3000+ level that are not fulfilling another requirement.

The science requirement is PHYS 1210 and 1220, or 1310 and 1320, or LIFE 1010 and 2022 or 2023 or 2210, or CHEM 1020 and 1030; two additional courses from among ASTR 2310, LIFE 1010, 2022 or 2023 or 2210, CHEM 1020, 1030, 1050, ES 2110, 2120, GEOL 1100, 1200, 2000, PHYS 1210, 1220, 1310, 1320, 2310, EE 2390.

The mathematics requirement is MATH 2200 and 2205 or 2350 and 2355, STAT 2010, 2050, or 2070.

The business requirement is ACCT 1010, ACCT 1020, IMGT 2400, IMGT 3400, MGT 3210, MKT 3210, and six semester hours of business courses at the 3000+ level that are not fulfilling another requirement.

In addition to the required courses listed above, students must choose courses that complete satisfaction of the following University Studies Program requirements: Writing 1 (WA), Writing 2 (WB), Writing 3 (WC), three cultural context courses (CH, CS, CA), oral communications (O), U.S. and Wyoming Constitutions requirement (V), Global Awareness (G), Information Literacy (L), U.S. Diversity (D), Intellectual Community (I) and Physical Activity (P).

Additional requirements: 3 upper-division semester hours in a non COSC course (UDNC). All COSC, MATH, Business and STAT courses must have a grade of C or better. The student's program must fulfill the university requirement of 48 semester credit hours in upper division (junior/senior) or graduate-level courses.

Suggested B.S. Program in Computer Science Business Option

Course Sequence of Major requirements

Students are free to satisfy program requirements in any order that complies with course prerequisites.

FRESHMAN YEAR: Fall	Hrs.
ES 1000	1
COSC 1010	4
Science I	4
ENGL 1010	3
MATH 2200	4

FRESHMAN YEAR: Spring	Hrs.
COSC 1030	4
Science II	4
PEAC 1001	1
MATH 2205	4
USP O Course	3

SOPHOMORE YEAR: Fall	Hrs.
COSC 2030	4
COSC 2150	3
ACCT 1010	3
COSC 2300	3
USP Cultural Context	3

SOPHOMORE YEAR: Spring	Hrs.
COSC 3011	3
IMGT 2400	3
USP Cultural Context	3
ACCT 1020	3
COSC 3020	4

JUNIOR YEAR: Fall	Hrs.
IMGT 3400	3
STAT 2050	4
Science Elective	4
USP V Course	3
COSC Elective	3

JUNIOR YEAR: Spring	Hrs.
Business Elective	3
Science Elective	4
USP Cultural Context	3
COSC 3050	1
MGT 3210	3

SENIOR YEAR: Fall	Hrs.
COSC 4950	1
COSC 4210	3
COSC System Course	3
Business Elective	3
ENGL 4010	3
MKT 3210	3

SENIOR YEAR: Spring	Hrs.
COSC 4955	2
COSC 4220	3
COSC Elective	3
COSC Elective	3
UDNC	3

Computer Science International Engineering Option

Computer science international engineering option requirements are subject to minor program changes. The published curricula are general guides. Students should consult the department office Web pages (www.cs.uwyo.edu) for current information.

Students must complete ENGL 1010, 4010; COSC 1010, 1030, 2030, 2150, 2300, 3011, 3015, 3020, 3050, 4950, 4955, theory course: 4100 or 4200, operating system course: 4740, programming language course: 4780 or 4785, system course: 4820 or 4760; and 12 semester hours of COSC courses at 3000+ level and not fulfilling another requirement. Three hours can be from the Computer Engineering [CPEN] electives.

The science requirement is PHYS 1210 and 1220, or 1310 and 1320, or LIFE 1010 and 2022 or 2023 or 2210, or CHEM 1020 and 1030; two additional courses from among ASTR 2310, LIFE 1010, 2022 or 2023 or 2210, CHEM 1020, 1030, 1050, ES 2110, 2120, GEOL 1100, 1200, 2000, PHYS 1210, 1220, 1310, 1320, 2310, EE 2390.

The mathematics requirement is MATH 2200, 2205, STAT 4220 and six semester hours selected from among MATH 2210, or higher numbered courses, COSC 4340 or STAT 3000- or 4000-level courses, except for MATH 2350, 2355, 4000 and variable-credit courses. Recommend: MATH 2250 and 3500.

The foreign language requirement is four semesters of a single foreign language and one semester of study abroad. Foreign language skills can be earned through a variety of means, including formal university coursework, intensive summer language programs, and previous education.

In addition to the courses listed above, students must choose courses that complete satisfaction of the following University Studies Program requirements: Writing 1 (WA), Writing 2 (WB), Writing 3 (WC), oral communications (O), U.S. and Wyoming Constitutions requirement (V), Information Literacy (L), Intellectual Community (I) and Physical Activity (P).

Additional requirements: six upper-division hours in non COSC courses (UDNC). All COSC, MATH, and STAT courses must have a grade of C or better. The student's program must fulfill the university requirement of 48 semester credit hours in upper division (junior/senior) or graduate-level courses.

Suggested B.S. Program in Computer Science International Engineering Option

Course Sequence of Major requirements

Students are free to satisfy program requirements in any order that complies with course prerequisites.

FRESHMAN YEAR: Fall	Hrs.
ES 1000	1
COSC 1010	4
MATH 2200	4
Foreign Language I	4
ENGL 1010	3

FRESHMAN YEAR: Spring	Hrs.
COSC 1030	4
MATH 2205	4
Foreign Language II	4
USP O Course	3
PEAC 1001	1

SOPHOMORE YEAR: Fall	Hrs.
COSC 2150	3
COSC 2030	4
COSC 2300	3
Foreign Language III	4
Science I	3

SOPHOMORE YEAR: Spring	Hrs.
COSC 3011	3
COSC 3020	4
MATH Elective	3
Foreign Language IV	4
Science II	4

JUNIOR YEAR: Fall	Hrs.
COSC 3015	3
Operating Systems Course	3
COSC Elective	3
Science Elective	4
USP V Course	3

JUNIOR YEAR: Spring Study Abroad	Hrs.
COSC Elective	3
Science Elective	4
MATH Elective	3
UDNC	3

SENIOR YEAR: Fall		Hrs.
COSC	4950	1
System Course		3
STAT	4220	3
Theory Course		3
ENGL	4010	3
UDNC		3

SENIOR YEAR: Spring		Hrs.
COSC	4955	2
COSC	3050	1
COSC Elective		3
COSC Elective		3
Programming Language Course		3

Computer Science (COSC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1010. Introduction to Computer Science I.

4. [M2↔(none)] Introduces the fundamental concepts of programming from an object-oriented perspective. Topics include simple data types, control structures, array and string data structures, algorithm development, and debugging techniques. Emphasizes good software engineering principles and developing fundamental programming skills in the context of a language that supports the object-oriented paradigm. *Prerequisite:* grade of C or better in MATH 1400 or Level 4 or higher on the Math Placement Exam within one year prior to the start of the course.

1030. Computer Science I. 4. [M3↔(none)]

Continues the introduction from COSC 1010 to the methodology of programming from an object-oriented perspective. Through the study of object design, introduces the basics of human-computer interfaces, graphics, and the social implications of computing, with an emphasis on software engineering. *Prerequisite:* COSC 1010 or equivalent experience and concurrent registration in MATH 2200.

1100. Computer Science Principles and Practice. 3. [M3↔(none)]

Introduces use of computers for algorithmic problem solving. Studies scope, major contributions, tools and current status of computer science. Presentation of computer science principles; use of software packages and evaluation of their effectiveness; and elementary programming. *Prerequisite:* C or better in MATH 1400 or in any University Studies QB or Level 4 or higher on Mathematics Placement Exam. (Offered based on sufficient demand and resources)

1200. Computer Information Systems. 3.

Introduces computers and information processing, computer systems and hardware, computer software, information processing systems, information systems and information resource management. Uses word processing, data base language and electronic spreadsheet program in hands-on exercises. *Prerequisite:* passing of Mathematics Placement Examination at Level 2 or equivalent.

2000. Undergraduate Topics: Computer Science. 1-3 (Max. 6).

Elementary topics current in computer science. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

2030. Computer Science II. 4. Builds on the introduction to object-oriented programming begun in COSC 1010 and 1030 with an emphasis on algorithms, data structures, and software engineering. *Prerequisite:* COSC 1030.

2150. Computer Organization. 3. Introduces students to the organization and architecture of computer systems, beginning with the standard von Neumann model and then moving forward to more recent architectural concepts. *Prerequisite:* COSC 1030.

2300. Discrete Structures. 3. Introduces the mathematical concepts that serve as foundations of computer science: logic, set theory, relations and functions, graphs (directed and undirected), inductively defined structures (lists and trees), and applications of mathematical induction. Provides an introduction to abstract and rigorous thinking in advanced mathematics and computer science. Cross listed with MATH 2300. *Prerequisite:* COSC 1030, MATH 2200 or 2350.

2409. _____ Programming. 1-3 (Max. 6).

Describes various computer languages focusing on their differences from prerequisite languages and uses of these new features. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

3011. Introduction to Software Design. 3.

Introduces the principles and practice of software design, including UML and design patterns. Uses case studies to illustrate design in action. *Prerequisites:* COSC 2030.

3015. Functional Programming. 3.

Studies programming in the context of a functional language that emphasizes algorithmic strategies over syntactic detail. *Prerequisites:* COSC 2030 and 2300.

3020. Algorithms and Data Structures. 4.

Introduces formal techniques to support the design and analysis of algorithms, focusing on both the underlying mathematical theory and practical considerations of efficiency. Topics include asymptotic complexity bounds, techniques of analysis, algorithmic strategies, and an introduction to automata theory and its application to language translation. *Prerequisites:* COSC 2030, 2150 and 2300.

3050. Ethics for the Computer Professional. 1.

The proliferation of computers has had a profound effect on our society. Computing professionals must be aware of the social and ethical implications of our activities. Examines the codes of behavior related to computer science through readings, discussions and case studies. *Prerequisites:* COSC 2030.

3900. Upper Division Topics in Computer Science. 1-3 (Max. 9).

Individual or small group pursuit of interdisciplinary problems in the use of computers or study of topics of inter-

est within industry. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

3970. Internship in Computing. 1-6 (Max. 12). Allows students to gain practical experience in computing. A signed contract with a supervisor and departmental adviser must be completed before enrolling for the internship. *Prerequisite:* sophomore standing.

4000. Topics in Computer Science for Educators. 1-6 (Max. 12). Current computer science topics appropriate for K-12 teachers. Credit may not be applied to major requirements in computer science or management information systems. *Prerequisite:* graduate standing. (Offered based on sufficient demand and resources)

4010. Special Topics in Computer Science. 1-3 (Max. 9). Individual or small group pursuit of interdisciplinary problems in the use of computers or study of advanced topics. (Maximum of 12 hours from 4010 and 5010 may be applied to graduate study.) *Prerequisites:* COSC 3020 concurrently and consent of instructor. (Offered based on sufficient demand and resources)

4100. Foundations of Computing. 3. Introduces several theoretical areas which are the basis of computer science. Languages and automata, computability, complexity, analysis of algorithms, logic, and the specification and correctness of programs. *Prerequisite:* COSC 3020.

4200. Computability and Complexity. 3.

Introduction to theoretical study of computability and efficient computation. Finite-state and pushdown automata; turing machines and the Church-Turing thesis; undecidability, computational complexity; NP-completeness. *Prerequisite:* COSC 3020.

4210. Analysis and Design of Information Systems. 3.

Students with information technology skills learn to analyze and design information systems. Practice of software engineering techniques during team-oriented analysis and design of a departmental system. *Prerequisite:* COSC 3020 or concurrent enrollment.

4220. Design and Implementation in Emerging Environments. 3.

Students who have completed the analysis and design course extend their knowledge by implementing an information system in an emerging systems environment. Teams use project management principles to implement the system. *Prerequisite:* COSC 4210.

4340. Numerical Analysis. 3. Machine arithmetic, analysis of rounding errors, direct and iterative methods for linear systems of equations, iteration, interpolation, numerical differentiation and integration, numerical solution of differential equations. Programming exercises using a procedural language. Cross listed with MATH 4340. *Prerequisites:* Grade of C or better in COSC 1010, Math 2310, and either MATH 2250 or 3310.

4350. System Simulation. 3. Introduces simulation and comparison with other techniques. Studies discrete simulation models, and introduction to, or review of, queuing theory and stochastic processes. Compares discrete change simulation languages. Examines simulation methodology including generation of random numbers and variates, design of simulation experiments for optimization, analysis of data generated by simulation experiments, and validation of simulation models and results. Selected applications of simulation. Dual listed with COSC 5350. *Prerequisites:* COSC 3020; MATH 4250 or STAT 2010.

4420. Advanced Logic. 3. Studies advanced topics in mathematical logic. Takes up such topics as: uninterpreted calculi and the distinctive contributions of syntax and semantics; metatheory, including completeness and consistency proofs; modal logic and semantics; logic as a philosophical tool. Cross listed with MATH/PHIL 4420. *Prerequisite:* PHIL 3420 or equivalent.

4450. Computer Graphics. 3. Introduction to computer graphics, an increasingly important area of computer science. Computer graphics, together with multimedia and the World Wide Web, offers exciting new possibilities for the design of human-computer interfaces. Presents the principles, techniques, and tools that enable these advances. Dual listed with COSC 5450. *Prerequisites:* COSC 3020 and MATH 2250.

4530. Digital Image Processing. 3. Methodologies and algorithms for processing digital images by computer. Includes color spaces, pixel mappings, filtering, image segmentation, geometric operations and pattern classification. Cross listed with EE 4530. *Prerequisites:* MATH 2205 and 2250; COSC 1030 or 3070.

4550. Introduction to Artificial Intelligence. 3. A computational study of intelligent behavior. Focus is on intelligent agents, which could be software agents or robots. Covers how agents sense, reason, and act within their environment. Includes problem-solving, search, knowledge representation, planning, game playing, learning, and neural and belief networks. Dual listed with COSC 5550. *Prerequisites:* COSC 3020.

4555. Machine Learning. 3. Goal is to program machines to learn and improve their performance on their own, based on experience and/or data. First half covers machine learning techniques; second half covers applications. Dual listed with COSC 5555. *Prerequisite:* COSC 3020.

4560. Modern Robots and Softbots. 3. Popular agent designs: logic-based, biomimetic, and physicomimetic. Foundational issues on internal robot and softbot knowledge representations. Planning and control, followed by issues of how agents can reason and plan under real-world conditions of environmental uncertainty. Concludes with discussions about papers on modern

robot and softbot applications, as well as invited lectures by graduate students and faculty. Dual listed with COSC 5560.

4740. Operating Systems Design. 4. Studies systems programming languages and computer systems design. Includes interacting processes, main storage management, procedure and data sharing, scheduling, deadlock problems and file management in batch processing and multiprogramming systems. Operating system implementation. *Prerequisite:* COSC 3020.

4750. Systems Programming and Management. 3. Comparatively studies features found in commercial and experimental operating systems. Discusses issues in system-level programming and administration, including shell programming, file management, resource control, configuration and security. Advanced topics include multiprocessor and real-time operating systems. *Prerequisites:* COSC 2030.

4755. Network Applications. 3. Introduces the structure, implementation, and theoretical underpinnings of computer networking and the applications that have been enabled by that technology. Dual listed with COSC 5755. *Prerequisites:* COSC 3020.

4760. Computer Networks. 3. Examines TCP/IP network protocols and implementation in depth, from the perspective of the link, network, transport, and application layers. Discusses problems and current solutions regarding the efficient use of network resources in the global, multimedia internet. *Prerequisite:* COSC 2030.

4765. Computer Security. 3. Introduces the topics of computer and network security and provides a foundation to allow students to identify, analyze, and solve computer security problems. *Prerequisite:* COSC 3020.

4780. Principles of Programming Languages. 3. Introduces the methods of analysis and design of programming languages. Covers syntax, typing schemes and the semantics (denotational and operations) in the context of functional and imperative programming languages. Students build interpreters to explore the implications of the different constructs on computations. *Prerequisites:* COSC 3015.

4785. Compiler Construction 1. 3. Theory and implementation of interpreters and compilers. Compiler topics include lexical analysis, top-down and bottom-up parsing methods, symbol tables, and code generation from a block-structured language with recursion and parameters. Project uses compiler writing tools. Dual listed with COSC 5785. *Prerequisite:* COSC 3020.

4790. Programming Language Processors. 3. Discusses principles and design aspects of programming language processors, including interpreters and compilers. Emphasizes components of compiled system, such as scanner, parser, symbol table, code generation, optimization, linking and loading. Uses compiler generation tools. *Prerequisite:* COSC 4780.

4820. Database Systems. 3. Provides comprehensive coverage of the problems involved in database design, in-depth coverage of data models and database languages. Students acquire practical skills of conceptual/logical database design and general familiarity with the problems and issues of database management. *Prerequisite:* COSC 3020.

4840. Software Engineering. 3. Extends the ideas of software design and development from the introductory programming sequence to encompass the problems encountered in large-scale programs. Topics include software engineering techniques from the technical and managerial perspectives, with a strong emphasis on software design. *Prerequisites:* COSC 3020 and 3011.

4950. Senior Design I. 1. Students choose a senior design project, investigate alternate solutions and submit a preliminary project design. Periodic oral and written project progress reports are required. *Prerequisite:* COSC 3011 and COSC 3020.

4955. Senior Design II. 2. Students complete the senior design project partially designed in COSC4950. Successful communication of the details of the solution through written documents and oral presentations will be required. *Prerequisite:* COSC 4950.

Department of Electrical and Computer Engineering

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MARGARETA STEFANOVIC, Dipl. Ing., University of Nis, Yugoslavia 1996; M.S. University of Southern California 2002; Ph.D. 2005; Assistant Professor of Electrical Engineering 2005.

Academic Professional:

JEFFREY R. ANDERSON, B.S.E.E. University of Utah 1989; M.S.E.E. 1992; Ph.D. University of Wyoming 2004; Assistant Academic Professional Lecturer in Electrical and Computer Engineering 2006.

Professors Emeriti:

Christos T. Constantinides, Jerry J. Cupal, Clifford D. Ferris, Raymond G. Jacquot, John W. Steadman

Electrical Engineering

The program of study outlined in the curriculum has been planned to provide the depth of understanding necessary to meet challenges of changing technology while being flexible enough to allow students to pursue in-depth study in at least one area of electrical engineering. In order to attain this, students are required to gain an understanding of mathematics and the basic engineering sciences. The fundamental electrical engineering education consists of courses in circuits, networks, electromagnetics, electronics, digital systems, communications, controls and energy conversion. Selection of elective courses, in consultation with the academic adviser, enables students to specialize in the above mentioned areas, as well as in robotics, microcircuits, microprocessors and high frequency electronics.

Laboratory work associated with electrical engineering courses is an important part of the curricula. This work helps students gain experience in applying the theoretical knowledge they acquire to practical engineering problems. Engineering design is an important component of the curriculum that concludes with a significant design experience in the senior year. Additional programs are described below.

F.M. Long Bioengineering Option.

Named in honor of UW Professor Francis M. Long, this area offers excellent opportunities for those interested in applying the techniques of the electronic engineer to problems of environmental science, wildlife studies, biology and medicine. Employment opportunities exist in state and federal agencies, industry and medical institutions. Career placement includes such areas as use of telemetry for wildlife management, environmental monitoring, design and development of biological and medical instrumentation and clinical engineering. With minor modifications, the curriculum shown may be used as preparation for entrance to medical or dental school.

Computer Engineering

Very rapid advances in semiconductor technology have made sophisticated digital devices available as an engineering tool. The computer engineering degree program is designed for those students who want a special emphasis in both the hardware and software associated with incorporating digital devices and microprocessors into various products and systems. It includes courses in computer science and electrical engineering for both software and hardware design. Extensive laboratory work gives students experience with wired logic and microprogrammed digital systems, microprocessors, personal computers, hardware descriptive language, and computer networks.

International Engineering Option

Engineering is a global profession and today's engineers must be able to work and interact in a variety of diverse cultural and technical environments. The international engineering option gives electrical and computer engineering students an opportunity to study culture and foreign language at the same time as they pursue their engineering degrees.

The option includes at least one semester of study abroad with courses taken in a foreign language. In addition, students may participate in a four-to-five month international internship. Foreign language skills can be earned through a variety of means, including formal university coursework, intensive summer language programs, and previous education.

Foreign language education and the study-abroad experience satisfy the cultural context requirements of the University Studies Program.

Educational Objectives

Graduates of the University of Wyoming Electrical and Computer Engineering Programs will have breadth of fundamental knowledge in mathematics, basic sciences, and engineering as well as depth of knowledge in electrical engineering or computer engineering; be able to communicate effectively within and outside their discipline and work effectively with others; be able to understand and resolve ill-defined problems; be effective independent learners; have the broad general education needed to appreciate the role of engineering in the societal context and appreciate the importance of ethics in the practice of the profession.

Graduate Program

The department offers programs of study leading to the Master of Science and Doctor of Philosophy degrees in electrical engineering. Study programs are individually planned to students' interests in both course work and research. For a detailed description of graduate programs see the *Graduate Bulletin*.

Grade Policy

Electrical and computer engineering majors must achieve a grade of C or better on courses that are prerequisites for courses within the student's course of study. Students must also achieve a grade of C or better in all required mathematics courses.

Concurrent Major and Minor

The department offers a concurrent major and minor in both the electrical engineering and computer engineering programs. Consult the department office for a current detailed list of requirements.

Combined BS/MS Degree

The combined BS/MS program in Electrical and Computer Engineering enables especially well-qualified students to be admitted to the MS program during the junior year of their BS program and to work thereafter towards both the BS and MS degrees. These students would earn the BS degree in either Electrical Engineering or Computer Engineering and the MS degree in Electrical Engineering following the current curricula. This program allows for early planning of the MS portion of the student's education, taking graduate courses as part of the BS degree, more flexibility in the order in which courses are taken, and more efficient use of what would otherwise be a final semester with a light credit hour load.

Program Objectives for Electrical and Computer Engineering

Graduates of the University of Wyoming Electrical and Computer Engineering Program will:

- (EE-OB1) Experience continued, long-term success in their career by having breadth of fundamental knowledge in mathematics, basic sciences, and engineering as well as depth of knowledge in electrical/computer engineering.
- (EE-OB2) Experience continued, long-term success in their career by being able to communicate effectively within and outside their discipline and work effectively with others.
- (EE-OB3) Experience continued, long-term success in their career by being able to understand and resolve ill-defined problems.
- (EE-OB4) Experience continued, long-term success in their career by being effective independent learners.
- (EE-OB5) Experience continued, long-term success in their career by having the broad general education needed to appreciate the role of engineering in the societal context and appreciate the importance of ethics in the practice of the profession.
- (EE-OB6) Be prepared and motivated to accept challenging assignments and responsibilities and be productive members of society.
- (EE-OB7) Demonstrate successful career growth (e.g. professional registration, graduate school, promotion, and advancement).

University of Wyoming, Electrical and Computer Engineering Program, Program Outcomes

All Electrical (Computer) Engineering graduates shall demonstrate:

1. (EE/CP-OT1) Comprehension of the fundamental theoretical concepts of electrical (computer) engineering.
2. (EE/CP-OT2) The requisite breadth and depth of knowledge and skills in electrical (computer) engineering, computer science, mathematics, and other disciplines to be effective engineers identifying and solving complex, integrated problems.
3. (EE/CP-OT3) An ability to design and conduct experiments, as well as to analyze and interpret data
4. (EE/CP-OT4) Correct engineering design and evaluation techniques.
5. (EE/CP-OT5) Use of the computer as an analytical tool and as a system component.
6. (EE/CP-OT6) Good written and oral communication skills.
7. (EE/CP-OT7) Practice of proper engineering ethics, safety, and professionalism.
8. (EE/CP-OT8) An understanding of the benefits and skills necessary to engage in independent learning.
9. (EE/CP-OT9) Skills to independently learn new engineering material and identify available resources for additional assistance.
10. (EE/CP-OT10) Ability to be effective team members.
11. (EE/CP-OT11) High educational and work quality standards.
12. (EE/CP-OT12) An understanding of their role as an engineer in our global society.

Electrical Engineering Curriculum

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
ES	1000	1
MATH	2200	4
CHEM	1020	4
ENGL	1010	3
COSC	1010 or ES 1060	3-4
PEAC	1001	1
Total Hrs.		16-17

FRESHMAN YEAR: Spring		Hrs.
MATH	2205	4
MATH	2250	3
ES	2110	3
PHYS	1210	4
US and WY Constitutions		3
EE	1010	1
Total Hrs.		18

SOPHOMORE YEAR: Fall		Hrs.
MATH	2310	3
ES	2120	3
ES	2210	3
PHYS	1220	4
Cultural Context/ Tech Elective		3
Total Hrs.		16

SOPHOMORE YEAR: Spring		Hrs.
MATH	2210	4
EE	2390	4
EE	2220	4
Sciences/ES Elective		3
Total Hrs.		15

JUNIOR YEAR: Fall		Hrs.
EE	3150	3
EE	3310	4
EE	3220	3
EE	3510	4
Cultural Context		3
Total Hrs.		17

JUNIOR YEAR: Spring		Hrs.
EE	3330	4
EE	4390	3
EE	4440	3
EE	4620	3
EE	4075	4
Total Hrs.		17

SENIOR YEAR: Fall		Hrs.
EE	4820	2
EE	4220	3
EE Electives		5
Cultural Context		3
ENGL	4010	3
Total Hrs.		16

SENIOR YEAR: Spring		Hrs.
EE	4830	2
EE Electives		8-9
Technical Elective		3
Cultural Context		3
Total Hrs.		16-17

Computer Engineering Curriculum

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
ES	1000	1
MATH	2200	4
CHEM	1020	4
ENGL	1010	3
COSC	1010	4
PEAC	1001	1
Total Hrs.		17

FRESHMAN YEAR: Spring		Hrs.
MATH	2205	4
ES	2110	3
PHYS	1210	4
COSC	1030	4
EE	1010	1
Total Hrs.		16

SOPHOMORE YEAR: Fall		Hrs.
MATH	2310	3
COSC	2030	4
ES	2120	3
ES	2210	3
PHYS	1220	4
Total Hrs.		17

SOPHOMORE YEAR: Spring		Hrs.
MATH	2210	4
MATH	2300	3
EE	2220	4
COSC	2150	3
EE	2390	4
Total Hrs.		18

JUNIOR YEAR: Fall		Hrs.
EE	3310	4
EE	3220	3
EE	4490	3
Cultural Context/Technical elective		3
Cultural Context		3
Total Hrs.		16

JUNIOR YEAR: Spring		Hrs.
EE	3330	4
EE	3150	3
EE	4390	3
Cultural Context		3
Science/ES Elective		3
Total Hrs.		16

SENIOR YEAR: Fall		Hrs.
EE	4820	2
EE	4870 or	4
COSC	4760	3
EE or COSC Elective		3
ENGL	4010	3
EE	4220	3
US and WY Constitutions		3
Total Hrs.		17-18

SENIOR YEAR: Spring		Hrs.
EE	4830	2
CPEN Option Courses		6
EE or COSC Elective		3-4
Cultural Context		3
Total Hrs.		14-15

Electrical Engineering (EE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1010. Introduction to Electrical and Computer Engineering. 1. Introduction to Electrical and Computer Engineering through a laboratory experience. Students perform both hardware and computer laboratory exercises in a wide range of areas of electrical and computer engineering.

2220 [3320]. Circuits and Signals. 4. Review of sinusoidal steady state analysis and ac power. Balanced three-phase circuits. Mutual inductance and linear transformers. Laplace transform. Laplace transform in circuit analysis. Frequency dependent circuits, including RLC cir-

cuit resonance. Magnitude and phase response, complex poles and zeros. Bode plots. Fourier series. Laboratory. *Prerequisite:* ES 2210.

2390. Digital Systems Design. 4. Binary logic, digital logic gates, reduction of Boolean expressions, combinational logic design. MSI and LSI combinational logic ICs, flip-flops, synchronous and asynchronous sequential systems design, MSI and LSI sequential system ICs, and algorithmic state machines. *Prerequisite:* MATH 2205. (Offered both semesters)

3150. Electromagnetics. 3. A thorough study of static electric and magnetic fields using vector methods with an introduction to dynamic fields. *Prerequisites:* ES 2210 and MATH 2210.

3220. Signals And Systems. 3. Discrete and continuous-time signals and systems. Topics include linear time-invariant systems; convolution; difference equations; FIR and IIR systems; sampling, aliasing, reconstruction, and quantization. Frequency domain concepts include discrete and continuous Fourier transforms, Z-transforms, system frequency response, Laplace transform properties, and applications of digital filters and DFT analysis. *Prerequisite:* EE 2220.

3310. Introduction to Electronics. 4. Physical characteristics and models of semiconductor devices with application to electronic circuit design. Rectifiers, biasing, load lines, amplifiers, with an introduction to operational amplifiers. Laboratory. *Prerequisite:* EE 2220, PHYS 1220.

3330. Linear Electronics Design. 4. Design applications of active semiconductor devices: two-port networks; single-stage, multistage, feedback, operational and power amplifiers; oscillators. Laboratory. *Prerequisite:* EE 3310.

3510. Electromechanics. 4. Polyphase circuits; ferromagnetic circuits and devices; single phase and polyphase transformers; basic electromechanical energy conversion; steady state characteristics and application of DC machines, AC synchronous and induction machines; fractional-horsepower AC motors. Includes laboratory. *Prerequisite:* EE 2220.

4075 [ES 3075]. C++ with Numerical Methods for Engineers. 4. Introduction to the fundamentals of practical engineering programming, using specific applications of numerical methods to demonstrate these principles. The use of an object oriented approach using C++ in an efficient manner is emphasized. Other solution approaches, including C and Matlab will be discussed as appropriate. Credit will not be allowed in both EE 4075 and ES 3070. *Prerequisites:* MATH 2205 and (COSC 1010 or ES 1060) and (MATH 2250 or MATH 2310).

4220. Probabilistic Signals and Systems. 3. Fundamentals of probability and statistics for engineers; reliability in engineering systems; random processes, statistical estimation, auto/cross correlation and power spectral density functions and linear filtering of random signals. *Prerequisite:* EE 3220.

4245. Digital Signal Processing. 3. Sampling and oversampling A/D's; FIR and IIR digital filter design, effects of quantization, practical realizations; applications of the discrete and fast Fourier Transform (DFT and FFT); correlation, periodograms, window effects, multi-rate techniques, multi-dimensional signal processing, and other topics in digital signal processing. *Prerequisite:* EE 3220.

4250. Network Synthesis. 3. Characterization and design specification of analog filters. First and second order passive and active filters. Butterworth and Chebyshev filter responses. Audio frequency active filter synthesis using operational amplifiers. Introduction to frequency transformations and sensitivity. *Prerequisites:* EE 2220 and 3330 or concurrent enrollment.

4300. Introduction to Microwave and RF Circuits. 3. Analysis and design of microwave and RF circuits with applications to communication and radar systems. Review of transmission line concepts and the Smith Chart, scattering parameters, microstrip lines, and matching networks. Analysis and design of microwave and RF amplifiers, oscillators, and mixers. Dual listed with EE 5300. *Prerequisite:* EE 3150, concurrent enrollment in EE 3330.

4330 [4370]. Electronic Systems Design. 4. Analog integrated circuits such as amplifiers (operational, instrumentation, isolation, video, transconductance, comparator, logarithmic and exponential); voltage regulators; analog multipliers and dividers; AC to DC converters; sample and hold circuits; digital to analog converters; analog to digital converters; function generators; phase locked loops. Includes design procedures for electronic systems implementing analog integrated circuits. Laboratory. *Prerequisites:* EE 2390 and 3330.

4340. Semiconductor Materials and Devices. 3. Physical properties of semiconductor materials and devices, including crystal lattices and energy bands, carrier generation, transport, and recombination. PN, metal-semiconductor, and heterojunction operation. Field Effect Transistors, including Metal Oxide Semiconductor (MOSFET), Junction (JFET), Metal Semiconductor (MESFET), and High Electron Mobility (HEMT) transistors. Bipolar Junction (BJT) and Heterojunction (HBT) Transistor operation. Cross listed with PHYS 4340. *Prerequisite:* PHYS 1220 or 1320.

4360. VLSI Design. 3. Introduction to CMOS processing, MOS fundamentals including devices models; switching and timing; analog subcircuits and amplifiers; inverters and CMOS gates; concept of standard cells and fully custom design; use of SPICE, digital simulation, and chip layout and verification software. *Prerequisites:* EE/COSC 2390 and EE 3330.

4390. Microprocessors. 3. Design of microcomputers, controllers and instruments which use microprocessors. Semiconductor memory design, CPU architecture, bus structure and timing, input-output interfaces and devices, assembly language programming, assemblers, compilers, editors and simulators. Emphasizes design techniques. Laboratory. *Prerequisite:* EE 2390.

4440. Communication Theory. 3. Amplitude and angle modulation and demodulation; digital baseband and carrier communication systems; performance of communication systems; and current topics in communication systems. *Prerequisite:* EE 3220.

4490. Hardware Descriptive Language (HDL) Digital Design. 3. Hardware Description Language design of digital systems. Industrial CAD tools are used to produce a functional description of hardware that is both simulated and then synthesized into hardware. Methods to describe both combinational logic and synchronous devices are given. Devices such as CPLDs and FPGAs are targeted in this design process. Emphasizes design techniques. *Prerequisite:* EE 2390.

4510. Power Systems. 3. Electric power distribution and transmission. Distribution systems, transmission line calculations, installation and protection; substations, corona, protective relaying and carrier current communication and telemetering. Introduction to system stability studies. *Prerequisites:* ES 2210 and EE 3510.

4530. Digital Image Processing. 3. Methodologies and algorithms for processing digital images by computer. Includes color spaces, pixel mappings, filtering, image segmentation, geometric operations and pattern classification. Cross listed with COSC 4530. *Prerequisites:* MATH 2205 and 2250.

4540. Energy Policies and Impacts. 2. Consequence of energy use; effects of development of coal, oil shale, oil, natural gas, uranium and geothermal energy; environmental impact on air and water pollution; federal, state and local regulations; renewable energy sources such as solar, wind, hydro, ocean thermal and wave. *Prerequisite:* senior standing.

4550. Electrodynamics. 4. Solid state control of AC and DC machines; DC machine dynamics; three-phase AC machine transients and dynamics; single phase motors; two-phase control motors; stepper motors; and sychros and control transformers. *Prerequisite:* EE 3510.

4560. Power Electronics. 3. Thyristors and other semiconductor devices; rectifiers; dual converters and cycloconverters; AC and DC switches and regulators; inverters and frequency changers; protection, control and application of static power converters. *Prerequisites:* EE 3330 and 3510.

4590. Real Time Embedded Systems. 3. Emphasizes a systems approach to real time embedded systems. Students are expected to apply methodical system design practices to designing and implementing a microprocessor-based real time embedded system. Students employ a

robot-based educational platform to learn the intricacies of real time embedded systems, distributed processing, and fuzzy logic. Students learn processor input/output interfacing techniques. Students use state-of-the-art design and troubleshooting tools. Dual listed with EE 5590. *Prerequisites:* EE 4390.

4620. Automatic Control Systems. 3. Feedback control systems analysis and design using frequency domain, time response and state-space methods. Routh's criteria, Nyquist criteria and root locus. Dominant pole controller design. Introduction to discreet controllers. Use of MATLAB. *Prerequisite:* EE 2220.

4800. Problems in _____ . 1-6 (Max. 6). Section 1 is individual study. Other sections are group study by seminar or class format. Features topics not included in regularly offered courses. *Prerequisite:* consent of instructor.

4820. Senior Design I. 2. Students choose a senior design project and complete the preliminary design. This stage of senior design includes investigation of alternative solutions that meet the project's requirements, cost analysis, and building the prototype circuit. Periodic oral and written project progress reports are required. *Prerequisites:* EE 2390, EE 3330 and corequisite courses in the area of the design project.

4830. Senior Design II. 2. Students complete the senior design project partially designed in EE 4820. The final result of the senior design project includes assembly of a PC board hardware that meets the project's requirements and final report describing the design procedure, designed hardware and software, and results of final testing. Periodic oral and written project progress reports are required. *Prerequisites:* EE 4820 and selected courses in the area of the design project.

4850. Research in _____ . 1-3 (Max. 4). Research experience for individual students. Investigations or extensions of topics which are not a part of formal course. May not be substituted for thesis/dissertation research credit and/or undergraduate design requirement. *Prerequisite:* senior standing in EE.

4870. Computer Network Hardware. 4. Study of Computer Network hardware architecture, design and functionality. The course addresses IEEE wired and wireless network architectures, routers, gateways and other network components. System administration of Windows NT and 2000 based networks forms an important component of the course. Laboratory sessions include commercial hardware and performance analysis through simulations. *Prerequisites:* EE 2390.

4970. Graphical Interface. 3. Graphical interface development using a suitable graphics language and foundation classes. The course will address issues like dynamic library links, threads, multitasking, and hardware interface of an application running under an operating system (Windows NT). The majority of the applications

will be in the electrical engineering and computer science areas. *Prerequisites:* EE/COSC 4070 or COSC 2030.

4990. Advanced Microprocessors. 3. Microcontroller Systems Design. 3. Architecture and instruction set of Intel family of microprocessors; Intel System Development Kit and its monitor program; Microsoft Macro Assembler (MASM) and Visual C/C++ Express; modular programming; High level language compilers of object code; Interface design issues of peripheral devices to Personal Computer. *Prerequisite:* EE 4390.

F.M. Long Bioengineering Curriculum

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
ES	1000	1
MATH	2200	4
CHEM	1020	4
ENGL	1010	3
COSC	1010 or ES 1060	3-4
PEAC	1001	1
Total Hrs.		16-17

FRESHMAN YEAR: Spring		Hrs.
MATH	2205	4
ES	2110	3
PHYS	1210	4
CHEM	2300	4
EE	1010	1
Total Hrs.		16

SOPHOMORE YEAR: Fall		Hrs.
MATH	2310	3
ES	2120	3
ES	2210	3
PHYS	1220	4
Cultural Context	.....	3
Total Hrs.		16

SOPHOMORE YEAR: Spring		Hrs.
MATH	2210	4
MATH	2250	3
EE	2390	4
EE	2220	4
Total Hrs.		15

JUNIOR YEAR: Fall		Hrs.
EE	3310	4
EE	3510	4
EE	3220	3
LIFE	1010	4
ENGL	4010	3
Total Hrs.		18

JUNIOR YEAR: Spring		Hrs.
EE	3330	4
EE	4390	3
EE	4075	4
LIFE	2022	4
Cultural Context	.....	3
Total Hrs.		18

SENIOR YEAR: Fall		<i>Hrs.</i>
BE	4810 or	3
EE	4330	4
EE	4820	2
EE	3150	3
EE	4220	3
EE Elective	.....	3-4
Technical/Cultural Context elective	.....	3
Total Hrs.		17-18

SENIOR YEAR: Spring		<i>Hrs.</i>
EE	4250 or	
EE	4620	3
EE	4830	2
MOLB	3610	4
US and WY Constitutions	.....	3
Cultural Context	.....	3
Total Hrs.		15

Bioengineering (BE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

4800. Topics in Bioengineering. 2-6 (Max. 6). Independent or group study of current topics not included in more formal course offerings in bioengineering, biology or engineering. *Prerequisite:* consent of instructor.

4810. Bioinstrumentation. 3. Electronic systems used to monitor physiological systems and function (cardiovascular, pulmonary, nervous); transducer systems, amplifiers and recording systems used in research and clinical applications. Laboratory. *Prerequisites:* EE 3330.

4820. Biodata Systems. 3. Extraction of physiological signals from noise, biomedical signal and image processing and modeling of physiological functions from experimental data. Includes hands-on exercises using both simulated and actual biomedical signals and/or images. Complements BE 4810, and can be taken alone, before, or after BE 4810. *Prerequisites:* EE 3320.

Department of Mechanical Engineering

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Department Head: Demitris A. Kouris

Professors:

DENNIS N. COON, B.S. Alfred University-New York; M.S. 1984; Ph.D. Pennsylvania State University 1986; Professor of Mechanical Engineering 1999, 1988.

ANDREW C. HANSEN, B.S. Montana State University 1980; M.S. University of Washington 1982; Ph.D. Montana State University 1985; Professor of Mechanical Engineering 1996, 1986.

DEMITRIS A. KOURIS, Diploma National Technical University of Athens 1982; M.S. Illinois Institute of Technology 1984; Ph.D. Northwestern University 1987; Professor Mechanical Engineering 2001; Head of Mechanical Engineering 2001.

DIMITRI J. MAVRIPLIS, B.S. McGill University 1982; M.Eng. 1982; Ph.D. Princeton University 1987; Professor of Mechanical Engineering 2003.

OIDVID A. PLUMB, B.S. Colorado State University 1967; M.S. 1972; Ph.D. State University of New York-Buffalo 1976; Professor of Mechanical Engineering 1999.

DAVID E. WALRATH, B.S. University of Wyoming 1974; M.S. 1975; Ph.D. University of Delaware 1986; Professor of Mechanical Engineering 1998, 1986.

Associate Professors:

PAUL A. DELLENBACK, B.S. Texas Tech University 1978; M.S. 1980; Ph.D. Arizona State University 1986; Associate Professor of Mechanical Engineering 1994, 1990.

MARK R. GARNICH, B.S. Michigan Technological University 1981; M.S. 1983; Ph.D. University of Wyoming 1996; Associate Professor of Mechanical Engineering 2001.

JONATHAN W. NAUGHTON, B.S. Cornell University 1986; Ph.D. Pennsylvania State University 1993; Associate Professor of Mechanical Engineering 2003, 1997.

DOUGLAS R. SMITH, Sc.B. Brown University 1987; M.A. Princeton University 1990; Ph.D. 1993; Associate Professor of Mechanical Engineering 2004, 1998.

Assistant Professor:

SUKKY JUN, B.S. Yonsei University Korea 1988; M.S. Michigan State University 1992; Ph.D. Northwestern University 1996; Assistant Professor of Mechanical Engineering 2006.

CARL P. FRICK, B.S. University of Colorado at Boulder 1999; M.S. 2003; Ph.D. 2005; Assistant Professor of Mechanical Engineering 2008.

Associate Lecturer:

ANN NANCY PECK, B.S. Lehigh University 1984; M.S. Rensselaer Polytechnic Institute 1987; Ph.D. 1992; Associate Lecturer in Mechanical Engineering 2000, 1997.

Senior Research Scientist:

SCOTT A. MORTON, B.S. University of Wyoming 1972; M.S. 1978; Research Scientist in Mechanical Engineering 1999.

Associate Research Scientist

CHANGWEN MI, B.S. Nanjing University, China 2001; M.S. UTSC, China 2003; Ph.D. University of Wyoming 2006; Research Scientist in Mechanical Engineering 2007.

Professors Emeriti:

Donald F. Adams

Bruce R. Dewey

William R. Lindberg

John E. Nydahl

Kynric M. Pell

Donald A. Smith

Robert A. Wheasler

Adjunct Faculty:

Mark J. Balas

Michael L. Kmetz

Dan Stanescu

Stephan Heinz

Mechanical Engineering is the broadest area of study in engineering. In contrast to other engineering disciplines, mechanical engineers are employed in significant percentages in almost all industrial and governmental organizations that employ engineers.

The spectrum of activities in which mechanical engineers are engaged continues to expand. The curriculum has in turn become flexible to allow for the education of mechanical engineering students in many diverse and allied areas, or for graduate school preparation.

The educational objectives of the Department of Mechanical Engineering are as follows:

- Prepare graduates to solve open-ended problems and effectively communicate the solutions.
- Prepare graduates for the professional practice of mechanical engineering.
- Prepare graduates for independent learning.
- Instill in our graduates an understanding of professional ethics and the relationship between the engineering profession and society.

The undergraduate program includes a foundation in mathematics, science, and engineering sciences. The two key elements of the mechanical engineering undergraduate program are laboratory experience and design experience. The program is directed toward developing the student's design skill and experience, culminating in the senior design course sequence.

The mechanical engineering curriculum affords the student the flexibility to pursue specific professional goals within the discipline. Such an opportunity needs to be carefully considered by each student, so that courses are chosen with these goals in mind. During the junior and senior years, the student selects courses to make up an 18 semester-hour block of technical electives. Mechanical engineering students can, if they choose, select a curriculum with specific concentrations, such as the example areas listed below:

- Manufacturing and Design
- Materials and Solid Mechanics
- Aerodynamics
- Energy Systems

The elective hours also represent the potential for students to consider a cross-college minor or a second (parallel) degree. The selection, however, must be approved by the student's adviser, and must be in accordance with an overall educational objective. Mechanical engineering degree candidates must meet the academic requirements of the college and in addition must have a GPA of 2.0 (C) in mechanical engineering courses attempted at this university. A grade of C or better must be earned in all engineering science and required mathematics courses.

International Engineering Option

In today's global engineering environment, it is becoming quite clear that in order to compete in the global marketplace for products, services, and careers, one must be technically, culturally, and linguistically literate.

The International Engineering Option offered by the Mechanical Engineering Department provides students with an opportunity to spend one or two semesters abroad. They will have the benefit of studying the language and culture of another country while completing their engineering degree at UW. Students in the program may take classes at a number of foreign institutions or participate in an internship.

An international experience involves more than just international study or an internship. Integration and immersion into another society removes cultural and linguistic barriers. Once these barriers have been breached, engineers and other technical professionals can begin to understand the perspectives and viewpoints held by others around the world. With this understanding, our students will not only benefit from the newly gained knowledge of international issues, practices, and opportunities, but they will also enhance their understanding of domestic issues and challenges.

The study of a foreign language and the study-abroad experience satisfy the cultural context requirements of the University Studies Program. As a result, there is only a slight increase in the total number of required credits for the BS degree

in Mechanical Engineering. For students without any prior knowledge of the relevant foreign language, the total number of credit hours is 134.

Graduate Programs

The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees are offered by the Department of Mechanical Engineering. In addition, the department offers combined programs leading to either a B.S./M.S. degree in Mechanical Engineering (BSMS-ME) or B.S. Physics/M.S. degree in Mechanical Engineering (PhysME). These programs provide an opportunity for undergraduate students (after fulfilling the Graduate School admission requirements) to enroll in the mechanical engineering M.S. program. This approach will enable them to receive their M.S. graduate degree in mechanical engineering within a minimum of one additional year of study. For more information, please contact the Department of Mechanical Engineering.

Students may select one of several areas of specialty in fluid dynamics, thermodynamics and heat transfer, vibrations and dynamics, materials, solid mechanics and mechanical design.

For general regulations concerning graduate degrees, see the *Graduate Bulletin*.

Mechanical Engineering Curriculum*

Suggested Course Sequence

FRESHMAN YEAR: Fall Hrs.

MATH	2200	.....	4
ES	1000	.....	1
ES	1060	.....	3
CHEM	1020	.....	4
ENGL	1010	.....	3
Physical education ⁸		.....	1
Total Hrs.			16

FRESHMAN YEAR: Spring Hrs.

MATH	2205	.....	4
ES	2110	.....	3
COJO	1010	.....	3
US & Wyoming Constitutions (V)		.....	3
Math/Science elective ¹		.....	3
Total Hrs.			16

SOPHOMORE YEAR: Fall Hrs.

MATH	2210	.....	4
ES	2120	.....	3
ES	2210	.....	3
ES	2410	.....	3
PHYS	1220	.....	4
Total Hrs.			17

SOPHOMORE YEAR: Spring Hrs.

MATH	2310	.....	3
ES	2310	.....	3
ES	2330	.....	3
ME	2020	.....	2
ENGL	2005	.....	3
CHEM 1030 or PHYS 2310 or 2320		.....	3-4
Total Hrs.			17-18

JUNIOR YEAR: Fall Hrs.

ME	2160	.....	2
ME	3010	.....	3
ME	3020	.....	3
ME	3040	.....	3
Business Elective ²		.....	3
Total Hrs.			14

JUNIOR YEAR: Spring Hrs.

ME	3170	.....	3
ME	3360	.....	3
ME	3450	.....	3
ME	4020	.....	3
Technical Elective ³		.....	3
Cultural Context Elective ⁷		.....	3
Total Hrs.			18

SENIOR YEAR: Fall Hrs.

ME	4010 or EE 4620	.....	3
ME	4060	.....	3
ME Elective ⁶		.....	3
Math/Science Elective ¹		.....	3
Cultural Context Elective ⁷		.....	3
Total Hrs.			15

SENIOR YEAR: Spring Hrs.

ME	4070	.....	3
ME Fluids Elective ⁶		.....	3
ME Solids Elective ⁵		.....	3
ME elective ⁴		.....	3
Cultural Context Elective ⁷		.....	3
Total Hrs.			15

International Engineering Option Curriculum*

Suggested Course Sequence

FRESHMAN YEAR: Fall Hrs.

MATH	2200	.....	4
ES	1000	.....	1
ES	1060	.....	3
CHEM	1020	.....	4
ENGL	1010	.....	3
Physical education ⁸		.....	1
Total Hrs.			16

FRESHMAN YEAR: Spring Hrs.

MATH	2205	.....	4
ES	2110	.....	3
COJO	1010	.....	3
US & Wyo Constitutions (V)		.....	3
Math/Science elective ¹		.....	3
Total Hrs.			16

SUMMER Hrs.

First Year Language I (1010)	.....	4
First Year Language II (1020)	.....	4
Total Hrs.		8

SOPHOMORE YEAR: Fall Hrs.

MATH	2210	.....	4
ES	2120	.....	3
ES	2410	.....	3
PHYS	1220	.....	4
Second Year Language I (2030)	.....	4	
Total Hrs.			18

SOPHOMORE YEAR: Spring		Hrs.
MATH 2310	.....	3
ES 2310	.....	3
ME 2020	.....	2
ENGL 2005	.....	3
CHEM 1030 or PHYS 2310 or 2320	.....	3-4
Second Year Language II (2040)	.....	3
Total Hrs.		17-18

SUMMER		Hrs.
ES 2210	.....	3
ES 2330	.....	3
Total Hrs.		6

JUNIOR YEAR: Fall		Hrs.
ME 2160	.....	2
ME 3010	.....	3
ME 3020	.....	3
ME 3040	.....	3
ME 3360	.....	3
Total Hrs.		14

JUNIOR YEAR: Spring		Hrs.
(Study Abroad Semester)		
ME 3170	.....	3
ME 3450	.....	3
Technical Elective ³	.....	3
Total Hrs.		9

SENIOR YEAR: Fall		Hrs.
ME 4010 or EE 4620	.....	3
ME 4060	.....	3
ME Electives ⁴	.....	6
Math/Science Elective ¹	.....	3
Total Hrs.		14

SENIOR YEAR: Spring		Hrs.
ME 4020	.....	3
ME 4070	.....	4
ME Solids elective ⁵	.....	3
ME Fluids elective ⁶	.....	3
Business Elective ²	.....	3
Total Hrs.		16

*A minimum of 128 credit hours graded (A-F) course hours are necessary to satisfy degree requirements. Students selecting the International Studies Option require a minimum of 134 credit hours to satisfy degree requirements. (Credits earned by examination count in these hours).

¹Math/Science electives: To be selected from the department-approved list.

²Business elective: ACCT 1010, BADM 1040, ES 4910, DSCI 3210, DSCI 4260, FIN 3250 or others as approved by adviser.

³Technical elective: Must have prior approval of the adviser. May be chosen from any engineering discipline, mathematics, science or business. 2 of the 4 elective courses (from among Math/Science, Business, or Technical electives) must be at the 3000+ level.

⁴ME Elective. Any ME course.

⁵ME Solids Electives: ME 4040, 4100, 4210, 4215.

⁶ME Fluids Electives: ME 3400, 440, 4340, 4350, 4430, 4470.

⁷The Cultural Context Electives must be chosen to earn one each of the following credits: CH (Humanities); CS (Social Sciences); CA (Arts) with embedded G (Global Awareness); and D (Cultural Diversity in the US).

⁸Offered S/U only. Need not be taken during freshman year, but must be completed prior to graduation.

Mechanical Engineering (ME)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2020 [2010]. Design of Experiments Lab. 2. A laboratory course designed to introduce students to basic experimental concepts in the context of statics and dynamics. The development of skills in report writing, experimental design, utilization of productivity software, interpersonal teamwork and fundamental statistics are emphasized. Cross listed with ESE 2020. *Prerequisites:* ES 2120; companion course ENGL 2005 for WB credit.

2160 [2140]. Fluids Laboratory. 2. A laboratory course to present experimental techniques, develop laboratory and interpersonal teamwork skills, and demonstrate some of the fundamental concepts of thermodynamics and fluid dynamics. Cross listed with ESE 2160. *Prerequisites:* ES 2330 and ME/ESE 2020.

3010. Intermediate Mechanics of Materials. 3. Expansion of the principles of solid mechanics: stress, strain, principal stresses, elastic and plastic behavior, failure theories and the use of energy methods. Analysis and design of thick-walled pressure vessels, noncircular cross sections under torsion, nonsymmetric beams under bending and curved beams. *Prerequisite:* ES 2410.

3020. System Dynamics. 3. Theoretical and experimental study of the dynamics of linear and non-linear lumped parameter models of mechanical, electrical, electronic, fluid, thermal and mixed systems. Cross listed with ESE 3020. *Prerequisites:* ES 2210, ME/ESE 2020, and MATH 2310. (Normally offered fall semester)

3040. Thermodynamics II. 3. Consideration of advanced thermodynamic topics including Maxwell's relations, compressible flow, and combustion. Applications to design of refrigeration cycles, humidification systems, and Rankine cycles. Cross listed with ESE 3040. *Prerequisite:* ES 2310. (Normally offered fall semester)

3170. Machine Design. 3. Application of engineering mechanics and materials science to the analysis and design of mechanical components such as bolted connections, springs, gears, bearings and shafts. Design for dynamic loading conditions. Principles of hydrodynamic lubrication. Introduction to computer-aided design. Case studies with appropriate topics. *Prerequisite:* ES 2410. (Normally offered spring semester)

3360 [ES 3360, ES 4360]. Fundamentals of Transport Phenomena. 3. Basic concepts of heat and mass transfer and their applications to problems involving engineering analysis and design. Topics include steady-state and transient conduction, free and forced convection (heat and mass), radiation and heat exchangers. Cross listed with ARE/ESE 3360. *Prerequisites:* ES 2310, 2330 and MATH 2310.

3400. Heating, Ventilating and Air Conditioning of Buildings. 3. Qualitative and quantitative study in concepts of basic air-conditioning with focus on buildings including building envelope, moist air thermodynamics, human comfort, thermal load calculations, thermal behavior of buildings, HVAC systems/equipment, and design of space air-conditioning and its relationship to architectural design. Cross listed with ARE 3400. *Prerequisites:* ES 2310.

3450 [ES 3450]. Properties of Materials. 3. Mechanical, electrical, thermal and chemical properties of materials. Theoretical treatment of structure of solids and designs for specified properties. Laboratory. *Prerequisite:* ES 2310. (Normally offered fall semester)

4010. Mechanical Vibrations. 3. The theory of single and multi-degree-of-freedom systems with an introduction to continuous systems. Determination of equations of motion, including natural frequency for free vibration and amplitude of forced vibration. Design of discrete and continuous systems for transient and harmonic excitations. *Prerequisites:* ES 2120, ME 3010 and MATH 2310. (Normally offered fall semester)

4020. Design of Mechanical/Electronic Systems. 3. Theoretical and experimental study of sensors and actuators, interfacing sensors and actuators to a microcomputer, discrete and continuous controller design, analog and digital electronics, and real-time programming for control. *Prerequisites:* ME 3020. (Normally offered spring semester)

4040. Introduction to Finite Elements. 3. An introduction to the theory and application of finite elements to the solution of various problems with emphasis on structural mechanics. The course includes development of the underlying matrix equations, the treatment of element generation and properties, and implementation of boundary conditions. *Prerequisites:* ME 3010 and MATH 2310.

4060 [3070]. Systems Design I. 3. First of a two-course design sequence constituting a capstone design experience. Student multidisciplinary teams prepare a project proposal or SOQ, generate a morphological study of their project and prepare project plans and specifications. Project management methods are also presented. *Prerequisites:* ME 3010, ME 3170, and ME 3360. (Normally offered fall semester)

4070. Systems Design II. 3. [W3♦WC] Continuation of a two-course design sequence. The design teams refine their designs, fabricate the project, test the project for compliance with the design specifications, write a comprehensive engineering design report including socioeconomic factors, and prepare and deliver a presentation of the project in a public forum. *Prerequisites:* ME 4060 and WB. (Normally offered spring semester)

4100. Manufacturing Processes. 3. Details of manufacturing processes used in production of metal, plastic and ceramic components with an emphasis on science and mechanics of processes. *Prerequisites:* ME 3010 and ME 3450.

4210. Introduction to Composite Materials. 3. Applications, mechanical properties and fabrication of fiber reinforced composite materials; stress analysis of laminated, anisotropic composite structures; study of special problems unique to composites. *Prerequisite:* ME 3010. (Normally offered fall semester)

4215. Composite Materials Design and Manufacturing. 3. Introduction to composite material manufacturing processes. Aspects of constituent material production, as well as design and fabrication of components using composite materials. Laboratory exercises, such as laminating, filament winding, pultrusion and compression molding. Final design and manufacturing class project. *Prerequisites:* ME 3010 and 4210. (Normally offered spring semester)

4240. Gas Dynamics I. 3. Thermodynamics of a compressible fluid; one-dimensional isentropic flow, normal and oblique shocks, expansion wave, flows with friction and heat transfer. *Prerequisites:* ES 2310 and 2330. (Normally offered fall semester)

4330. Internal Combustion Engines. 3. Thermodynamic analysis and design of Otto and Diesel cycles for vehicle applications and stationary power generation. A substantial laboratory component will examine design and manufacturing issues, as well as engine performance in a variety of scenarios. Cross listed with ESE 4330. *Prerequisites:* ME/ESE 3040 and ME/ARE/ESE 3360.

4340. Gas Turbine Engines. 3. Thermodynamic analysis and design of ground-based and aero-propulsion gas turbine engines. *Prerequisites:* ES 2310 and 2330. (Normally offered spring semester)

4350. Airplane Aerodynamics and Flight. 3. Introduces students to the fundamentals of airfoil and wing design, airplane aerodynamics, and airplane stability. Links these fundamental ideas to the design and performance of real aircraft. *Prerequisites:* ES 2330. (Normally offered spring semester)

4360. Introduction to Nuclear Energy. 3. Introduction to the fundamentals of nuclear engineering, including power plant design and the fuel cycle. Topics include the fuel cycle and fuel design, reactor physics, reactor theory and design, reac-

tor thermo-hydraulics, radiation protection and safety, and fuel reprocessing and recycling. Cross listed with ESE 4360. *Prerequisites:* MATH 2310, ESE 3040, and ESE 3360.

4430. HVAC System Analysis. 3. Engineering design and performance analysis procedures for commercial building mechanical systems including energy conservation techniques. Relationship to aesthetic, architectural and structural elements are considered. Cross listed with ARE 4430. *Prerequisites:* ARE 3400 and ARE/ME 3360 or concurrent enrollment. (Normally offered alternate spring semesters)

4450 [3110]. Principles of Materials Selection. 3. A review of the economic and engineering aspects of materials selection. A detailed study of the properties, applications and limitations of engineering materials systems. Emphasis is on metal alloy systems, but non-metallics are included. Forming and joining processes are outlined. *Prerequisite:* ME 3450. (Normally offered spring semester)

4470. Alternative Energy Sources and Applications. 3. An introduction to energy conversion systems likely to become significant sources of energy in the coming decades is presented. Some specific areas that will be discussed include existing energy demands and policy, origin of energy, wind, solar, biomass, and nuclear energy, and energy storage. This course is typically offered every 3rd semester. Cross listed with ARE 4470. *Prerequisite:* ME 3360 or ARE 3360.

4474. Topics in Mechanical Engineering I. 1-3 (Max. 6). Directed research in mechanical engineering. *Prerequisite:* junior standing in engineering. (Offered both semesters)

4480. Building Air and Hydronic Systems. 3. Design and analysis of building air and hydronic systems with focus on the application, design and analysis of thermal energy distribution systems (air and hydronic systems) for building space air conditioning. Requires enrollment in associated laboratory session. Cross listed with ARE 4480. *Prerequisite:* ARE/ME 4430.

4490. Modeling and Optimization of Energy Systems. 3. Application of principles of thermodynamics, fluids, and heat and mass transfer in the component and system-level design of energy/thermal systems, including modeling, simulation and optimization techniques. Examples are drawn from building environmental control, energy conversion and thermal industrial processes. Students work on projects for integration of these components in the design of energy/thermal systems. Requires enrollment in associated laboratory session. Cross listed with ARE 4490. *Prerequisites:* ARE/ME 3360 and 3400.

Energy Systems Engineering

Energy Systems Engineering is a new undergraduate degree offering by the Dept. of Mechanical Engineering. The ESE program was designed to train engineers to address one of this country's foremost challenges: to achieve energy independence and yet meet the growing demand for energy, while at the same time addressing critical environmental concerns. The program is intended to help meet these challenges by preparing students to be:

- technology leaders in energy conversion and environmental protection systems
- capable managers in the energy industry
- versatile overseers of energy development by the governmental sector
- technically-trained and environmentally-sensitive liaisons between the energy industry and the public.

ESE engineers will be trained in alternative and environmentally-friendly energy conversion systems, as well as more traditional technologies that will continue to play an important role for the foreseeable future.

Although the discipline of mechanical engineering has historically been responsible for the design of energy conversion cycles and equipment, issues outside the conventional realms of engineering are increasingly important to address as new and improved energy conversion systems are implemented. The engineer trained in Energy Systems will be better equipped than traditional Mechanical Engineers to deal with the environmental, legal, political, economic, and ethical aspects of new energy projects.

The ESE degree has many course work requirements in common with the Mechanical Engineering degree, particularly in the thermal, fluids, and energy conversion sciences. However, the ESE program emphasizes energy conversion aspects of Mechanical Engineering and requires course work from UW's School of Environment and Natural Resources (SENR), course work in environmental ethics and environmental law, and two electives picked from a list of classes that focus attention on energy and the environment. The SENR courses will expose students to issues related to permitting such as preparation of environmental impact studies, and regulations such as the Endangered Species Act. In addition, there are five technical electives that allow the student to choose more detailed study in personal areas of interest, including for example, courses in environmental engineering, wind engineering, solar engineering, nuclear engineering, and petroleum engineering.

It should be emphasized that ESE is a rigorous engineering program that requires dedicated preparation in high school, including four years of math, science, and language arts. In fact, technical writing skills are emphasized throughout the ESE curriculum so that the program has more extensive writing requirements (including two "WC" courses) than most other programs at UW.

The ESE program will likely not be ABET-accredited before 2016. This is due to the nature of the engineering accreditation process that requires a new engineering program to have at least one graduate before an application to the accreditation agency can be made. The ME program has been continuously accredited since 1941 so that there is a high degree of confidence that the ME faculty will similarly guide the ESE program to a successful accreditation review once the program is eligible. Once accredited, state engineering licensure boards typically apply the accreditation retroactively to past graduates of the program.

The educational objectives of the ESE program are the same as those listed for the ME program. Energy Systems Engineering degree candidates must meet the academic requirements of the college, obtain a grade of (C) or better in all Engineering Science and required mathematics courses, and must have an average GPA of 2.0 (C) in ESE and ME course work. An International Engineering Option similar to that in ME is also available. No graduate degree program in ESE is anticipated at this time, but an interdisciplinary Masters Degree in Wind Energy is under development for the fall 2010.

Energy Systems Engineering Option Curriculum*

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
MATH	2200	4
ES	1000	1
ES	1060	3
CHEM	1020	4
ENGL	1010	3
Total Hrs.		15

FRESHMAN YEAR: Spring		Hrs.
MATH	2205	4
ES	2110	3
COJO	1010	3
LIFE	1010	4
US & Wyo Constitutions (V)		3
Total Hrs.		17

SOPHOMORE YEAR: Fall		Hrs.
MATH	2210	4
ES	2120	3
ES	2410	3
PHYS	1220	4
Total Hrs.		17

SOPHOMORE YEAR: Spring		Hrs.
MATH	2310	3
ES	2310	3
ES	2330	3
ESE	2020	2
ATSC	2020	2
Cultural Context Elective ⁷		3
Total Hrs.		17

JUNIOR YEAR: Fall		Hrs.
ESE	3020	2
ESE	3040	3
Math/Science Elective ¹		3
ESE Elective		3
ESE Elective		3
Physical Education ⁸		1
Total Hrs.		16

JUNIOR YEAR: Spring		Hrs.
ESE	2160	3
ESE	3360	3
ESE Technical Elective ¹⁰		3
PHIL	2330/2340	3
ENR	3XXX	3
Cultural Context Elective ⁷		3
Total Hrs.		17

SENIOR YEAR: Fall		Hrs.
ESE	2160	3
ESE	4060	3
ESE Technical Elective ¹⁰		3
ESE Technical Elective ¹⁰		3
ENR	4000	3
Business Elective ²		3
Total Hrs.		15

SENIOR YEAR: Spring		Hrs.
ESE	4070	3
ESE Technical Elective ¹⁰		3
ENR	4900	3
ESE Technical Elective ¹¹		3
Cultural Context Elective ⁷		3
Total Hrs.		15

* A minimum of 128 credit hours graded (A-F) course hours are necessary to satisfy degree requirements.

¹Math/Science electives: To be selected from the department-approved list.

²Business elective: ACCT 1010, BADM 1040, ES 4910, DSCI 3210, DSCI 4260, FIN 3250 or others as approved by advisor.

³Technical elective: Must have prior approval of the advisor. May be chosen from any engineering discipline, mathematics, science, or business. 2 of the 4 elective courses (from among Math/Science, Business or Technical electives) must be at the 3000+ level.

⁴ME Elective. Any ME Course.

⁵ME Solids Electives: ME 4040, 4100, 4210, 4215.

⁶ME Fluids Electives: ME 3400, 4240, 4340, 4350, 4430, 4470.

The Cultural Context Electives must be chosen to earn one each of the following credits: CH (Humanities); CS (Social Sciences); CA (Arts) with embedded G (Global Awareness); and D (Cultural Diversity in the US).

⁸Offered S/U only. Need not be taken during freshman year, but must be completed prior to graduation.

⁹ESE Electives: Two ESE Electives to be chosen from: ENR 3XXX Applied GIS, POLS 4051 Environmental Politics, POLS 4350 Sustainable Development and Global Policy, GEOL 3500 Global Change - A Geologic Perspective, GEOL 3650 Energy - A Geologic Perspective, and PETE 4000 Environment, Tech, and Society.

Energy Systems Engineering (ESE)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2020 [2010]. Design of Experiments Lab.

2. A Laboratory course designed to introduce students to basic experimental concepts in context of statics and dynamics. Development of skills in report writing, experimental design, utilization of productivity software, interpersonal teamwork and fundamental statistics are emphasized. Cross listed with ME 2020. *Prerequisites:* ES 2120; companion course ENGL 2005 for WB credit.

2160. Fluids Laboratory I. 2. A laboratory course to present experimental techniques, develop laboratory and interpersonal teamwork skills, and demonstrate some of the fundamental concepts of thermodynamics and fluid dynamics. Cross listed with ME 2160. *Prerequisites:* ES 2330 and ME 2020.

3020. System Dynamics. 3. Theoretical and experimental study of the dynamics of linear and non-linear lumped parameter models of mechanical, electrical, electronic, fluid, thermal and mixed systems. Cross listed with ME 3020. *Prerequisites:* ME 2020, ES 2210, and MATH 2310. (Normally offered fall semester)

3040. Thermodynamics II. 3. Consideration of advanced thermodynamic topics including Maxwell's relations, compressible flow, and combustion. Applications to design of refrigeration cycles, humidification systems, and Rankine cycles. Cross listed with ME 3040. *Prerequisite:* ES 2310. (Normally offered fall semester)

3360. Fundamentals of Transport Phenomena. 3. Basic concepts of heat and mass transfer and their applications to problems involving engineering analysis and design. Topics include steady-state and transient conduction, free and forced convection (heat and mass), radiation and heat exchangers. Cross listed with ARE/ME 3360. *Prerequisites:* ES 2310, 2330 and MATH 2310.

4060. Systems Design I. 3. First of a two-course design sequence constituting a capstone design experience on an energy-related project. Multidisciplinary teams prepare a project proposal or Statement of Qualifications, generate a morphological study of their project, develop mathematical models of their design, and prepare project plans and specifications. Project management and methods are also presented. *Prerequisites:* ESE 3040 and ESE 3360 (Normally offered fall semester)

4070. Systems Design II. 3. [W3♦WC] Continuation of a two-course design sequence. The design teams refine their designs, fabricate the project, test the project for compliance with the design specifications, write a comprehensive engineering design report including socioeconomic factors, and prepare and deliver a presentation of the project in a public forum. *Prerequisites:* ME 4060 and WB. (Normally offered spring semester)

4330. Internal Combustion Engines. 3. Thermodynamic analysis and design of Otto and Diesel cycles for vehicle applications and stationary power generation. A substantial laboratory component with examine design and manufacturing issues, as well as engine performance in a variety of scenarios. *Prerequisites:* ESE 3040 and ESE 3360.

4360. Introduction to Nuclear Energy. 3. Introduction to the fundamentals of nuclear engineering including power plant design and the fuel cycle. Topics include the fuel cycle and fuel design, reactor physics, reactor theory and design, reactor thermo-hydraulics, radiation protection and safety, and fuel reprocessing and recycling. *Prerequisites:* MATH 2310, ESE 3040, and ESE 3360.

The College of Health Sciences is the place for students interested in improving and maintaining the physical and social health of others. We offer challenging degree programs in the “helping professions” and serve as the gateway to schools of medicine, dentistry, physical and occupational therapy, physician’s assistant study, and optometry.

Health sciences students receive not only a superior education from knowledgeable and caring faculty but also precise and personal guidance from conscientious advising personnel. Students benefit, too, from practicums and internships that help them refine and test the skills acquired in lectures and labs as well as opportunities to participate in dynamic, interdisciplinary research projects.

The college is also the home of the Wyoming INstitute for Disabilities (WIND); the Center for Rural Health Research & Education (CRHRE); the Geriatric Education Center (WYGEC); two Family Medicine Residency Centers; the Wyoming, Washington, Alaska, Montana, and Idaho (WWAMI) medical education contract program, and WY-DENT, the dental contract program with the University of Nebraska and Creighton University.

We serve as the state certifying office for the Western Interstate Commission on Higher Education (WICHE) program (refer to the section on WICHE in the first part of this bulletin for program description or go to www.uwyo.edu/hs/upao/wichewwami.asp).

Any student seeking admission to programs in the College of Health Sciences will be required to obtain a background check as specified by college policy. Please contact your school or division for specific information.

Programs of Study Undergraduate Degrees

Bachelor of Science

- Kinesiology and health promotion
- Athletic training option
- Physical education teaching
- Speech, language and hearing sciences

Bachelor of Science in Dental Hygiene

Bachelor of Science in Nursing

Bachelor of Social Work

Graduate Degrees

Master of Science

- Nursing
- Kinesiology and health
- Speech-language pathology

Master of Social Work

For details on graduate work, consult the *Graduate Bulletin*.

Professional Degree *Doctor of Pharmacy*

Minors in Health Sciences

Minors in the College of Health Sciences are designed to complement a student’s major and augment educational and employment opportunities. They are designed to increase the student’s knowledge of health care, issues within health care, and provide them with a greater understanding of what it means to work in any aspect of health care.

Minors in Health Sciences include: *Health Sciences*

This minor is designed for the student who wants to have a career in health care but not necessarily as a provider. Instead s/he may be interested in being an administrator of a hospital or nursing home, a career in public health, or even as a health care practitioner who wants a more complete view of health care.

The minor consists of 21 hours of coursework in a variety of topics that will provide breadth in a student’s background. For further information, please contact the Undergraduate and Preprofessional Advising Office at (307)766-6704 or (307)766-3499, rooms 110 and 112 of the Health Sciences building or e-mail preprof.hs@uwyo.edu or check out our web site: www.uwyo.edu/hs/minor.

Disability Studies

The Disability Studies minor is an interdisciplinary approach to examining the interplay between the lived experience of disability and the social construct of disability. The minor will provide a balance between theory and practical hands-on application. Students will gain a broad understanding of disability issues for working with people with disabilities rather than specific disciplinary skills and techniques. The minor consists of 18 credit hours.

Aging and Human Development

Please contact the Undergraduate and Preprofessional Advising Office at (307)766-6704 or (307)766-3499, rooms 110 and 112 of the Health Sciences Center or e-mail preprof.hs@uwyo.edu.

Undergraduate and Preprofessional Advising Office Health Sciences Center, 110 & 112

The Undergraduate and Preprofessional Advising Office (UPAO) in the College of Health Sciences provides preprofessional advising to all UW students regardless of their academic majors, who are interested in pursuing future study in medicine, dentistry, optometry, occupational therapy, physical therapy, physician’s assistant, or other health care careers such as chiropractic. A bachelor’s degree is usually required for admission to a professional school. The University of Wyoming does not offer degrees in preprofessional areas. Students may pursue any UW degree program in which they have an interest and at the same time complete the admission requirements for the professional schools they wish to attend. The Undergraduate and Preprofessional Advising Office advises students for their professional program prerequisites as well as other aspects of becoming solid candidates. Each student will also have an adviser in his/her major for advising in the major.

Current information about admission requirements, entrance examinations, professional school curriculums, interviewing skills, and test preparation is available. Suggested course work and timelines are available for medicine, dentistry, optometry, physical therapy, occupational therapy, and physician assistant study. Current admissions data and addresses for specific schools are available. Specific schools may have additional requirements; students are urged to check with the schools they wish to attend.

Information and residency applications for the WICHE programs and the WWAMI Medical Education Program, and WY-DENT, the dental education program, may be found online at www.uwyo.edu/hs/upao/wichewwami.asp.

The Undergraduate and Preprofessional Office also advises students in the health sciences minor, those in dental hygiene, and those who are undeclared in the College of Health Sciences.

Bachelor of Science Degree in Health Sciences

The College of Health Sciences is currently reviewing the bachelor’s degree in Health Sciences program. No new students are being accepted in this major pending the review. Please contact the Undergraduate and Preprofessional Advising Office, rooms 110 and 112 of the Health Sciences Center, call (307)766-6704 or (307)766-3499, or e-mail preprof.hs@uwyo.edu for information.

Health Sciences (HLSC)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1010. Exploring the Health Sciences. 1. [(none)♦I, L] Understand the philosophy of higher education; develop a commitment to educational excellence. Discover the primary philosophy/value system of health-related disciplines/professions; develop sensitivity to issues particularly germane to cultural diversity within health care; develop critical thinking skills, master knowledge specific to health-related fields, and develop competence in communication skills and information literacy.

1020. Intellectual Community: Women in Sports. 3. [(none)♦I, L] Provides an overview of the role of American women in sports. Studies concepts about women, sports, and society in contemporary and historical perspectives. Topics include: history of women in sports, physiological, social and cultural considerations, media image, and careers. Cross listed with WMST 1020. *Prerequisites:* none.

1090. SPARX: Topics in Interdisciplinary Health Care. 1 (Max. 3). Each semester a different topic or disease state is highlighted. Using film, lectures, and selected readings, students are introduced to interdisciplinary collaboration between health care and mental health professionals. Benefits to patient care and barriers in making interdisciplinary connections are addressed. *Prerequisites:* none.

3250. Health and Illness in American Religious Life. 3. A cross-cultural study of the connections between religion and health. Students learn to appreciate and analyze the role different religions play in understanding health and illness, as well as the role religions can play in the context of modern medicine. *Prerequisite:* junior standing or permission of instructor.

4020. SPARX: Advanced Topics in Interdisciplinary Health Care. 1 (Max 3). Interdisciplinary collaboration for improved health outcomes is the focus of this class. Students develop a deeper understanding of the benefits and difficulties that exist for interdisciplinary teams. *Prerequisites:* At least two upper-division courses in CHS, may be taken concurrently.

4030. Experiences in Community Health Service. 0. Students will be advised and guided by faculty in the College of Health Sciences in providing health related community services. Activities will vary and include but are not limited to participation in health screenings, providing programs at senior housing, working with the Wyoming Geriatric Education Center, participating in CHAP activities, etc. *Prerequisite:* Upper division status (junior or senior) or current enrollment in a professional program in the College of Health Sciences and permission of instructor.

4040. Service Learning in Healthcare Training. 1. Provides an opportunity for students to discuss, reflect upon and learn from their community-based experiences. Students also consider the broader implications of becoming a reflective practitioner, working within a health-care team and the benefits of interprofessional collaboration. *Prerequisites:* involvement in CHAP; upper division standing.

4100. Global Public Health. 3. [(none)♦G]. Introduces students to the global context of public health, to principles underlying global health, and to dimensions of public health particular to international settings. It examines major themes and policies in global health and analyzes health problems and varying responses to them in different parts of the world. Dual listed with HLSC 5100; cross listed with INST 4100. *Prerequisite:* upper division student status.

4700. Health Care Informatics. 3. Provides an overview of the technological resources, databases, standardized languages and applications of information systems in the provision of health care. Emphasis is placed on application to evidence-based practice in rural settings. *Prerequisites:* basic computer literacy and consent of instructor.

4970. Interdisciplinary Seminar in Health Sciences. 3. [W3♦(none)] An interdisciplinary seminar designed to explore research, skills, roles and preparation of all health care professionals to gain a better understanding of the unique contribution each makes to interdisciplinary practice. *Prerequisites:* completion of 24 hours in College of Health Sciences; senior standing. (Normally offered spring semester)

4985. Health Sciences Internship. 1-6 (Max. 6). Gives students an opportunity to gain practical experience in a health care field of their choice. The intense relationship with a mentor allows the student to become socialized into a health care field, gain practice skills, and relate to other health care professionals in an interdisciplinary way. For S/U Only. *Prerequisite:* completion of all other degree requirements. (Offered fall, spring and summer)

4990. Current Topics in the Health Sciences. 1-6 (Max. 12). Provides upper division/graduate students with the opportunity for critical analysis and in-depth examination of various current topics in health science fields. *Prerequisites:* twelve hours in College of Health Sciences coursework, or in field related to the topic, or admission to a professional program within the College of Health Sciences. Individual topics courses may require specific course(s) as prerequisite. Contact the instructor for specific information. Dual listed with HLSC 5990.

Dental Hygiene

The University of Wyoming and Sheridan College offer a cooperative program of dental hygiene education which, when completed, results in two degrees. An Associate of Applied Science degree in dental hygiene is awarded by Sheridan College following completion of the prerequisites and dental hygiene prescribed study. A Bachelor of Science in Dental Hygiene degree is awarded by the University of Wyoming following completion of the Associate of Applied Science in dental hygiene, the University Studies Program, and other requirements of the University of Wyoming, for a total of 128 credit hours including 48 upper level hours, 30 of which must be from the University of Wyoming.

The program is structured to the following guidelines:

1. Prerequisite courses (pre-dental hygiene) consist of prescribed general education requirements. These requirements may be met by attending any accredited post-secondary educational institution.
2. The professional program in dental hygiene consists of two core years and is offered only at Sheridan College in cooperation with UW.
3. During the core professional program, specified dental hygiene courses are offered cooperatively at Sheridan College; lower-division courses are offered by Sheridan College, upper-division courses by UW.

Because the prerequisites may be satisfied at any accredited post-secondary educational institution, students pay tuition at the institution in which they are enrolled. Sheridan College tuition and fees are charged during the first year of the dental hygiene program; University of Wyoming tuition and fees are charged in the second year of the program and for remaining requirements taken through UW.

The American Dental Association has awarded full accreditation to the Associate of Applied Science degree in dental hygiene at Sheridan College. Graduates are eligible to take the National Board of Dental Hygiene exam, as well as regional and state exams for licensure, as registered dental hygienists.

Applicants should visit www.sheridan.edu/programs/dental.asp for specific prerequisites and application materials. Applications are due to Sheridan College by March 1 of the year they wish to enter the program. Class sizes are limited. Admission is contingent upon successful completion of a background check.

The primary objective of the program is to assure that graduates have knowledge and abilities necessary to successfully practice dental hygiene.

All prerequisite coursework must be completed with a cumulative grade point of 2.75 (on a 4 point scale). Science courses must be current within five years at the time of application to Dental Hygiene professional program. Completion of the prerequisite courses does not guarantee admission to the professional program.

Curriculum

Prerequisites:

<i>(Pre-dental hygiene)</i>		<i>Hrs.</i>
ENGL	1010 or equivalent	3
ENGL	2020	3
KIN/ZOO	2040*, 2041*@ or.....	4
KIN/ZOO	3115*@	4
CHEM	1000 or 1020.....	4
MOLB	2021*	4
MATH	1000 or 1400.....	3
COJO	1010	3
PSYC	1000	4
ANTH	1200 or SOC 1000	3
FCSC	1140 or 1141.....	2-3

@ KIN/ZOO 2040/2041 and 3115 require prerequisite of LIFE 1010

* Must be taken within 5 years of the time of application to the Dental Hygiene Program

Students interested in the bachelor's degree in dental hygiene should contact the Undergraduate and Preprofessional Advising Office in the Health Sciences Center, rooms 110 and 112, or phone (307)766-6704 or (307)766-3499. E-mail: denthygiene@uwyo.edu; www.uwyo.edu/hs/dentalhygiene.

Students admitted to the dental hygiene program fall 2005 and beyond will need to complete ENGL 4010, Technical Writing in the Professions, for their WC.

Dental Hygiene (DHYG)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

3230. Clinical Seminar II. 2. Adjunct to clinical dental hygiene courses devoted to resolution of problems arising from direct patient care in the clinic. Includes medically compromised patients; introduces and prepares for more advanced clinical techniques. *Prerequisite:* DHYG 2420. (Normally offered fall semester)

3250. Clinical Seminar III. 2. Prepares dental hygiene students to make transitions from an educational setting to private practice. Covers range of subjects enabling students to meet challenges associated with variety of patient care issues, including meeting needs of the elderly. Discusses various dental specialty practices. *Prerequisites:* DHYG 3230, 3300 and 3350 or concurrent enrollment. (Normally offered spring semester)

3300. Clinical Dental Hygiene II. 5. Students gain further practical experience in dental hygiene procedures by providing comprehensive patient care in the Sheridan College and Veterans' Administration Medical Center clinics. A flexible, self-paced format allows students to meet requirements in procedures for patient record-keeping, patient education, dental prophylaxis, dental radiography and other routine clinical procedures. *Prerequisite:* DHYG 2350. (Normally offered fall semester)

3350. Clinical Dental Hygiene III. 5. Allows students to garner practical experience in clinical procedures requiring greater skill and more knowledge than procedures previously undertaken. Students successfully completing this course are fully prepared for transition to office practice. *Prerequisite:* DHYG 3300. (Normally offered spring semester)

3400. General and Oral Pathology. 3. Designed to teach students concepts underlying general and oral manifestations of human disease states, manifestations of specific diseases, relationships to body defense mechanisms, and potential implications of medical and dental hygiene treatment. To the extent possible, applications to clinical situations in dental hygiene practice are made. *Prerequisites:* one year pre-dental hygiene (including general pathology); MOLB 2021 or equivalent. (Normally offered fall semester)

3410. Oral Histology and Embryology. 2. Studies development and histologic structure of elements in head and neck region. Emphasizes embryology of structures in orofacial region. Relates histologic features to functional characteristics as much as possible. *Prerequisite:* successful completion of fall semester (sophomore) dental hygiene courses. (Normally offered fall semester)

3550. Community Dental Health. 3. Introduces basic skills needed to assess, plan and implement strategies to evaluate the dental health of the community, including research methodology and basic statistical analysis. Provides students with basic understanding of significant social, political, psychological and economical factors influencing the American Health Care System. *Prerequisite:* DHYG 3100. (Normally offered spring semester)

3720. Office Practice. 2. Provides students with current information and experience in office practice and management. Discusses professionalism; office leadership roles; legal responsibilities; team responsibilities in dental offices; and selecting, securing and maintaining satisfying employment. *Prerequisites:* DHYG 2300, 2350, 3300 and a communications course. (Normally offered spring semester)

3750. Periodontology. 3. Briefly reviews anatomy and histology of periodontal structures and dental accretions. Studies classifications and etiology of periodontal diseases, including local and systemic factors. Thoroughly explores the hygienist's role in disease recognition, prevention, therapeutic procedures and maintenance. (Normally offered fall semester)

3770. Local Anesthesia. 1. Provides comprehensive background for performing field infiltration and nerve block anesthesia. Includes relevant pharmacology, prevention, and/or management of complications and pain control. *Prerequisite:* successful enrollment in dental hygiene major or consent of instructor. (Normally offered fall semester)

3775. Local Anesthesia Lab. 1. Taken concurrently with DHYG 3770, Local Anesthesia. Provides students opportunities to apply principles learned. Clinical laboratory experience includes practice, demonstrations and evaluation of local anesthesia techniques. *Prerequisites:* successful completion of sophomore year course work in dental hygiene, current certifications in CPR, and curriculum enrollment in dental hygiene major or consent of instructor. (Normally offered fall semester)

4850. Education Practicum in Dental Hygiene. 6. Allows students to experience both clinical and didactic elements of dental hygiene teaching. *Prerequisites:* completion of dental hygiene didactics, all requirements of program. Final course of program. (Offered both semesters)

Division of Communication Disorders

265 Health Sciences, 766-6427

Clinic FAX: (307) 766-6829;

Division FAX: (307) 766-5584

Web site: www.uwyo.edu/comdis

Director: Teresa Ukrainetz

Professors:

MARY HARDIN-JONES, B.A. Texas Tech University 1978; M.S. 1979; Ph.D. University of Iowa 1984; Director, Division of Communication Disorders 2001; Professor of Speech-Language Pathology 2005, 2001.

DAVID L. JONES, B.S. Westminster College 1980; M.A. University of Iowa 1983; Ph.D. 1987; Professor of Speech-Language Pathology 2005, 2001.

TERESA A. UKRAINETZ, B.A. University of Calgary 1984; M.S. University of British Columbia 1987; Ph.D. University of Texas at Austin 1995; Professor of Speech-Language Pathology 2007, 1995.

Associate Professors:

MICHAEL A. PRIMUS, B.A. University of Minnesota 1969; M.S. Colorado State University 1975; Ph.D. University of Washington 1984; Associate Professor of Audiology 1984.

Assistant Professors:

MELISSA M. ALLEN, B.A. University of Oregon 1992; M.S. 1999; Ph.D. 2003; Assistant Professor of Speech-Language Pathology 2007.

JILL E. SENNER, B.S. Northwestern University 1991; M.S. Purdue University 1996; Ph.D. Northwestern University 2002; Assistant Professor of Speech-Language Pathology 2008.

ROGER W. STEEVE, B.A. San Diego State University 1990; M.A. 1993; Ph.D. University of Washington 2004; Assistant Professor of Speech-Language Pathology 2005.

Academic Professionals:

LUCY C. CARTER, B.S. University of Wyoming 1993; AAS-Interpreter, Front Range Community College 1995; Assistant Lecturer 2005.

TODD L. CORBETT, B.A. University of Wyoming 1993; M.A. Lewis & Clark College 1994; Associate Lecturer 2006, 1999.

LYNDA D. COYLE, B.A. Holy Names College 1981; M.S. University of Wisconsin-Eau Claire 1982; Senior Lecturer 2007, 1999.

CHRISTIANE DECHERT, B.A. Georg August Universität 1979; M.A. University of Arizona 1982; M.A. Washington State University 1997; Assistant Lecturer 2001.

TERESA J. GARCIA, B.S. University of Wyoming 1989; M.S. 1991; Associate Lecturer 2004, 1995.

CATHERINE L. ROSS, B.S.W. Missouri State University 1973; M.S. University of Wyoming 1999; Assistant Lecturer 2008.

AMY M. WEAVER, B.S. University of Wyoming 1997; M.S. 2001; Assistant Lecturer 2004.

Adjunct Faculty:

Robert Quesal Ph.D.

Cathy Binger, Ph.D.

Adjunct Clinical Instructors:

Amy Bracken, M.S. CCC-SLP

Lisa Burns, M.S. CCC-SLP

Kathe Dahill, M.S. CCC-SLP

Susie Fornstrom, M.S. CCC-SLP

Lani Kersenbrock, M.S. CCC-SLP

Tempe Murphy, M.S. CCC-SLP

Micky Routson, M.S. CCC-SLP

Jean Marie Seitz, M.S. CCC-SLP

Professors Emeriti:

Janis A. Jelinek

Douglas W. Laws

The speech-language pathology and audiology areas are concerned with communicative behavior. Included in these areas are the studies of systems underlying the normal communicative process (phonetics, acoustics, neurology, anatomy and physiology); development of speech, hearing and language functions; deviations from the normal communicative process; and diagnosis and management of speech, language and hearing disorders.

The Division of Communication Disorders offers a bachelor's (B.S.) degree in speech, language and hearing science. The bachelor's degree is considered preprofessional preparation for entrance into a graduate program in either speech-language pathology or audiology. A graduate degree is needed to work in most employment settings, and is required for Wyoming State Department of Education certification. The division offers a Master of Science degree in speech-language pathology. The combined undergraduate and graduate programs are designed to prepare students to meet the academic and clinical requirements for Wyoming licensure and the Certificate of Clinical Competence awarded by the American Speech-Language-Hearing Association.

The graduate program in speech-language pathology is accredited by the Council of Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). See the *Graduate Bulletin* for additional information.

Any student seeking admission to the graduate program in Speech-Language Pathology within the Division of Communication Disorders will be required to obtain a background check as specified by college policy.

Undergraduate Learning Outcomes

- I. The Division will maintain accreditation in audiology and speech-language pathology through the American Speech-Language-Hearing Association.
- II. Upon completion of the B.S. program in Speech Language and Hearing Science, students will:
 - A. Demonstrate knowledge of the principles of biological sciences, physical sciences, mathematics, and the social/behavioral sciences.
 1. The student will successfully complete at least one course in each of the biological, physical, social, and mathematical sciences.
 - B. Demonstrate knowledge of the biological bases of human communication
 1. The student can describe anatomy and physiology of the speech mechanism, including respiration, phonation, articulation, and resonance.
 2. The student can describe anatomy and physiology of the hearing mechanism.
 3. The student can describe anatomy and physiology of the swallowing mechanism.
 - C. Demonstrate knowledge of the neurological bases of human communication
 1. The student can describe major components of the central and peripheral nervous system.
 2. The student can describe the auditory pathways and processes in the central nervous system.
 3. The student can describe the language pathways and processes in the central nervous system.
 4. The student can describe the speech pathways and processes in the central nervous system.
 - D. Demonstrate knowledge of the acoustic bases of human communication
 1. The student can describe acoustic properties of vowels and consonants.
 2. The students can describe transmission of sound waves through air.
 3. The student can explain the psychoacoustic properties of sound and related measurements (pitch, loudness).
 - E. Demonstrate knowledge of the psychological bases of human communication
 1. The student can describe cognitive development and its relationship to language.
 - F. Demonstrate knowledge of the developmental bases of human communication
 1. The student can demonstrate knowledge of phonological development.
 2. The student can demonstrate knowledge of syntax, semantics, and pragmatics.
 3. The student can demonstrate knowledge of swallowing development.
 4. The student can describe the development of literacy.
 5. The student can describe major features of multiple language acquisition.

- G. Demonstrate knowledge of the linguistic bases of human communication
 1. The student can transcribe speech using the International Phonetic Alphabet.
 2. The student can identify phonological processes.
 3. The student can describe constituents within each area of syntax, semantics, and pragmatics.
 4. The student can perform a language sample analysis.
- H. Demonstrate knowledge of the cultural bases of human communication
 1. The student can identify the effects of cultural and socioeconomic variation on speech acquisition.
 2. The student can identify the effects of cultural and socioeconomic variation on language acquisition.

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
USP CA Course	.....	3
USP D Course	.....	3
ENGL 1010	.....	3
MATH 1400 (or 1450)	.....	3
POLS 1000	.....	3
Total Hrs.		15
FRESHMAN YEAR: Spring		Hrs.
USP CH Course	.....	3
LIFE 1010	.....	4
SPPA 1010	.....	3
PSYC 1000	.....	3
Elective	.....	3
Total Hrs.		16
SOPHOMORE YEAR: Fall		Hrs.
KIN 2040	3	
KIN 2041	1	
USP WB Course	.....	3
USP G Course	.....	3
SPPA 3265	.....	3
SPPA 2110	.....	4
Total Hrs.		17
SOPHOMORE YEAR: Spring		Hrs.
FCSC 2121	.....	4
SPPA 2120	.....	4
SPPA 3210	.....	3
PHYS 1050/1110	.....	4
Total Hrs.		15
JUNIOR YEAR: Fall		Hrs.
Elective	.....	3
USP QB Statistics Course	.....	4
SPPA 4160	.....	4
USP O Course	.....	3
Physical Education	.....	1
Total Hrs.		15
JUNIOR YEAR: Spring		Hrs.
Elective	3000/4000	3
SPPA	4310	3
SPPA	4380	3
Elective	.....	6
Total Hrs.		15
SENIOR YEAR: Fall		Hrs.
Electives	3000/4000	6
EDAD	4215	2
SPPA	4340	3
SPPA	4750	3
Elective	.....	2
Total Hrs.		16

SENIOR YEAR: Spring		Hrs.
SPPA	4240	3
SPPA	4250	3
Elective	3000/4000	6
SPPA	4150	3
Total Hrs.		15

Total Undergrad. Credit Hrs. 124
Total Hrs. Required for Degree 124

Note: a grade of C or better must be earned in all courses in the major; courses in the major must be taken for a letter grade unless offered for S/U only. A minimum of 48 credit hours of upper-division courses are required for graduation.

Speech, Language and Hearing Clinic

Speech and hearing clinical services are available to University of Wyoming students. For information concerning these services, contact the Division of Communication Disorders.

There is one student organization with whom speech-language pathology and audiology majors may choose to affiliate, the National Student Speech-Language and Hearing Association. Objectives are to promote and recognize scholastic achievement and to support clinical and/or research endeavors.

Speech-Language Pathology (SPPA)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1000. Orientation to Communication Disorders. 3. [F1♦(none)] Acquaints students with professions of speech-language pathology and audiology. Provides students with opportunity to complete University Studies Orientation requirement.

1010. Introduction to Communication Disorders. 3. [(none)♦I, L] Introduces information regarding basics of speech and hearing. Discusses disorders of speech and hearing by defining the problem, etiology or theories of cause, classifications and controversies, evaluation techniques and therapies to correct the disorder.

2110 [4100]. Beginning Sign Language. 4. Examines basic principles of American Sign Language with nonverbal techniques. Vocabulary of 1500 basic signs should be attained by semester end. *Prerequisites:* ENGL 1010 or consent of instructor. (Offered fall, spring and summer)

2120 [4120]. Intermediate Sign Language. 4. Emphasizes receptive fluency and understanding of colloquial sign language, as well as learning to translate from English to American Sign Language. *Prerequisites:* SPPA 2110.

3210 [2210]. Phonetics. 3. Articulatory and acoustic description of speech sound production. Introduction to the International Phonetic Alphabet and development of phonetic transcription skills.

3265 [3400]. Anatomy and Physiology of Speech, Swallowing and Hearing. 3. Introduces the student to the anatomy of the normal speech and hearing systems as well as the physiologic underpinnings of the speech (respiration, phonation, articulation), swallowing, and hearing (external, middle, and inner ear) systems. Theories of speech production and speech perception are presented. *Prerequisites:* KIN 2040.

4000. Workshop in Speech Pathology/Audiology. 1-8 (Max. 8). Varies with interests of student requests. Incorporates material relative to any area of speech and hearing. *Prerequisite:* consent of instructor. (Offered based on sufficient demand and resources)

4070. Deaf Culture and the History of Deaf America. 4. [C2♦CS] Studies deaf culture and deaf history in the United States. Culture topics will include deaf community dynamics, humor, behavior, emotional and social interaction, besides issues involving deaf children as a linguistic minority. History will be discussed from the 1700s to the present in the U.S. Dual listed with SPPA 5070. *Prerequisites:* SPPA 2110.

4130. Advanced Sign Language. 4. Encompasses translation of English idioms for ASL and learning of ASL idioms, along with drugs, religion and sexuality signs, vocabulary and cultural usage. *Prerequisites:* SPPA 2120.

4140. Sign Language Practicum. 1-4 (Max 12). Provides hands-on experience for advanced sign language students to improve and retain signing skills. *Prerequisites:* consent of instructor; SPPA 2110 or 2120. (Offered fall, spring and summer)

4150. Aural Rehabilitation. 3. Examines basis for and characteristics of communication problems created by hearing loss and management procedures to facilitate communication and adjustment to hearing loss. Includes acoustic and visual properties of speech, amplification devices and hearing loss in school children. Dual listed with SPPA 5150. *Prerequisite:* SPPA 4340.

4160. Speech and Language Development. 4. Focuses on speech and language acquisition processes. Describes speech, prelinguistic and linguistic abilities of typically developing children. Overviews concomitant cognitive development and social contexts and their relationship with speech and language development. *Prerequisite:* ENGL 4750 or equivalent.

4210. Diagnostic Procedures in Communicative Disorders. 3. Introduces interviewing, case history taking and selection of speech, language and developmental tests used in the diagnostic process. *Prerequisites:* SPPA 3210, 4160.

4240. Language Disorders Across the Lifespan. 3. The nature and causes of developmental and acquired language disorders across the lifespan are examined. Topics include the behavioral and linguistic characteristics of specific language impairment, intellectual disability, autism, traumatic brain injury, right hemisphere trauma, aphasia, and dementia. Principles of assessment and remediation are introduced. *Prerequisites:* SPPA 3265, SPPA 4160.

4250. Clinical Methods. 3. [W3♦(none)] Exploration of principles of assessment and intervention, including completion of 12 hours of clinical observation of speech-language pathology and audiology services; writing of observation reports, goals and objectives, treatment notes, data collection and analysis; introduction to ASHA Code of Ethics, treatment planning, counseling and interviewing techniques. *Prerequisites:* senior standing or consent of instructor. (Normally offered fall semester)

4310. Hearing Science. 3. Study of 1) the nature of sound, 2) normal hearing processes, and 3) disorders of the auditory system. Topics include characteristics of simple and complex sound, sound travel in the environment, perception and analysis of sound in humans, and causes of hearing loss. *Prerequisite:* SPPA 3265. (Normally offered fall semester)

4340. Basic Audiology. 3. An introduction to audiology as a profession, with primary focus on screening and diagnostic methods for the clinical evaluation of hearing loss in children and adults. *Prerequisites:* SPPA 3265. (Normally offered spring semester)

4380. Neurological Basis of Communication. 3. Studies details of human nervous system, including central and peripheral nervous systems, major motor and sensory pathways and special senses. Emphasizes neurology of various communication disorders. *Prerequisites:* SPPA 3265.

4500. Early Childhood: Language Development and Disorders. 3. Encompasses development of normal children's linguistic abilities. Presents concomitant motor, cognitive and social development; instructional procedures to facilitate language development; and effect of various disabilities on development of the communicative system of the child. Course cannot be substituted for SPPA 4160, 4240 or 5160. *Prerequisites:* minimum of junior standing and consent of instructor.

4750. Research Methods in Communication Disorders. 3. [(none)♦WC] Deals with scientific investigation of normal, disordered, and intervention aspects of speech, language, and hearing. Topics include evaluating and synthesizing published research, research writing, research design, and data analysis techniques. The aims are to develop writing competence within the discipline, to create research-aware clinicians, and to introduce students to research careers. *Prerequisite:* STAT 2070.

Division of Kinesiology and Health

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Clinical Assistant Professor:

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Lawrence Deal, Patricia Moore, Ken Robertson, M.D., Shane Tweeter

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Instructors:

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GA Athletic Trainers:

Brett Anderson, UW Athletics
Cole Vertz, UW Athletics
Sonnie Palm, UW Wellness Program

Professors Emeriti:

Paul Dunham
Ward Gates
Charles W. Huff
Donna Marburger
John Woods

The Division of Kinesiology and Health has three principle functions specific to undergraduate students: (1) to prepare students in kinesiology and health promotion or kinesiology and health promotion-athletic training for a variety of clinical and non-clinical settings; (2) to prepare students to teach physical and health education in schools K-12; and (3) to deliver the university wide Physical Activity and Your Health program to meet the University Studies Physical Activity and Health requirement. Students enrolled in these programs must meet academic standards as determined by the Division of Kinesiology and Health, College of Health Sciences, and the University of Wyoming.

For those students who excel academically, an honors program is available which includes an uncommitted block of 12 credit hours. Students may elect to pursue an area of specific interest by scheduling an honors semester within the university or at another cooperating institution.

A graduate program leading to a Master of Science degree in Kinesiology and Health is offered by the Division (see the *Graduate Bulletin*).

Program Admission

Students who meet University of Wyoming entry requirements are admitted to the university in one of the three undergraduate majors that leads to the Bachelor of Science degree. The Division's undergraduate majors are open at the freshman level to all graduates of accredited high schools. Advanced placement for students with previous college credit is based on evaluation of transcripts of previous academic work. When students are ready to begin their junior year in one of the three undergraduate programs offered, they must make application for admission. The entry course for admission to the junior year of the Kinesiology and Health Promotion (K&HP) program and the Kinesiology and Health Promotion-Athletic Training (K&HP-AT) program is KIN 3021, Physiology of Exercise. The entry course for admission to the Physical Education Teacher Education (PHET) program is KIN 3012, Teaching Lab I. To be eligible, students must have completed all program course prerequisites and have a minimum cumulative grade point average of 2.5 (2.75 for PHET majors). Admission to the three majors is a competitive process and applicants meeting minimum requirements are not guaranteed admission to the major. Application to the K&HP major must be received by the Division of Kinesiology and Health no later than April 15 for fall admission and no later than November 20 for spring admission.

Application to the K&HP-AT and PHET majors is conducted only in the fall. The application deadline for these two majors is April 15.

University Studies Program Physical Activity and Health Requirement

Effective with students entering UW in the fall of 1999, all undergraduate students, regardless of age, must successfully complete a course in Physical Activity and Health. The basis of this requirement is to help students gain an understanding of the impact physical activity or inactivity has on their health. Students gain the knowledge, skills, and experience which enable them to make informed decisions about their own health as it relates to their life and longevity. The course PEAC 1001, Physical Activity and Your Health, meets the University Studies Program Physical Activity and Health requirement.

Undergraduate Majors

The requirements to graduate with a Bachelor of Science degree in the majors offered by the Division of Kinesiology and Health are as follows:

I. Kinesiology and Health Promotion Major

There are two options within the Kinesiology and Health Promotion major: (1) Kinesiology and Health Promotion-Athletic Training, and (2) Kinesiology and Health Promotion.

1. Kinesiology and Health Promotion—Athletic Training

A. FRESHMAN-SOPHOMORE YEARS

LIFE	1010 (SB)	4
CHEM	1000 or 1020	4
COJO	1010 (O)	3
ENGL	1010 (WA)	3
ENGL	2020 (WB, CH)	3
FCSC	1140 or 1141	2
HLED	1006	3
HLED	1221 or Red Cross CPR/First Aid	2
PEAC	1001 (P)	1
KIN	1005 (I, L)	2
KIN	1052	3
KIN	1058	3
KIN/ZOO	2040 (SB)	3
KIN/ZOO	2041 (SB)	1
KIN	2057	3
KIN	2058	3
KIN	2068	1
KIN	2078	1
KIN/ZOO	3115	4
MATH	1400, 1405, or 1450 (QA)	3
PSYC	1000 (CS)	3
STAT	2050 or 2070 (QB)	4
USP U.S. Constitution course (V)		3
Total Hours		62

In the spring semester of their sophomore year, students must make application for admission to the final two years of the Athletic Training (K&HP-AT) program (professional program). This includes a \$30.00 application fee, completion of coursework specific to the first two years of the program, a minimum grade point average of 2.50, completion of a written essay, and an interview. Admission to the K&HP program is a competitive process and applicants meeting the minimum requirements are not guaranteed admission to the major.

B. JUNIOR-SENIOR YEARS (professional)

i. Required Courses (54 hours)

ENGL	4010 (WC)	3
HLED	3020	3
KIN	3010	3
KIN	3021	4
KIN	3037 or 3038	3
KIN	3042	3
KIN	3052	3
KIN	3058	3
KIN	3068	2
KIN	3078	2
KIN	4029	3
KIN	4052	3
KIN	4058	3
KIN	4068	3
KIN	4088	3
PHYS	1050 or 1110	4
USP Cultural Context - Arts (CA)		3
USP Global Awareness Course (G)		3
USP Cultural Diversity Course (D)		3

ii. HLED and KIN Electives (9 hours)

HLED	3000	3
HLED	3010	3
HLED	4004	3
KIN	3034	3
KIN	3040	3

KIN	4042	3
KIN	4056	4
KIN	4062	3
KIN	4090	3

Plus any new course offerings.

Minimum Total Hours 120

2. Kinesiology and Health Promotion

A. FRESHMAN-SOPHOMORE YEARS

LIFE	1010 (SB)	4
COJO	1010 (O)	3
CHEM	1000 or 1020	4
COSC	1200	3
ENGL	1010 (WA)	3
FCSC	1140 or 1141	2
HLED	1006	3
HLED	1221 or Red Cross CPR/First Aid	2
MATH	1400, 1405, or 1450 (QA)	3
PEAC	1001 (P)	1
KIN	1005 (I, L)	2
KIN/ZOO	2040 (SB)	3
KIN/ZOO	2041 (SB)	1
KIN/ZOO	3115	4
PHYS	1050 or 1110	4
PSYC	1000 (CS)	3
STAT	2050 or 2070 (QB)	4
USP Cultural Context - Humanities (CH)		3
USP Cultural Context - Arts (CA)		3
USP Cultural Diversity Course (D)		1
USP Global Awareness Course (G)		3
US and Wyoming Constitutions (V)		3
USP Writing II Course (WB)		3
Total Hours		63

In the spring semester of their sophomore year, students must make application for admission to the final two years of the Kinesiology and Health Promotion (K&HP) program (professional program). This includes a \$30.00 application fee, completion of coursework specific to the first two years of the program, a minimum grade point average of 2.50, and completion of a written essay. Admission to the K&HP-AT program is a competitive process and applicants meeting the minimum requirements are not guaranteed admission to the major.

B. JUNIOR-SENIOR YEARS (professional)

i. Required Courses (16 hours)

HLED	3020	3
ENGL	4010 (WC)	3
KIN	3021	4
KIN	3037 or 3038	3
KIN	3042	3

ii. HLED and KIN Electives (15 hours)

Students must complete 15 credit hours of upper division HLED and/or KIN courses specific to one of the following three concentrations: (a) Fitness and Wellness; (b) Health Promotion; or (c) Medical and Therapeutic Sciences (pre-professional).

iii. Specialization Areas (15 hours) - 3000 or 4000 level courses

Students must complete 15 credit hours of upper division coursework that complements their selected area of concentration (i.e., Fitness and Wellness; Health Promotion; or Medical and Therapeutic Sciences [pre-professional]).

iv. Internship or Research Experience (6-12 hours)

Students must complete at least six hours of Internship Experience or Research Experience that complements their selected area of concentration (i.e., Fitness and Wellness; Health Promotion; or Medical and Therapeutic Sciences [pre-professional]).

Minimum Total Hours 120

II. Physical Education Teacher Education K-12

A. FRESHMAN-SOPHOMORE YEARS

LIFE	1010 (SB)	4
CHEM	1000 or 1020	4
COJO	1010 (O)	3
COSC	1200	3
ENGL	1010 (WA)	3
ENGL	2020 (WB, CH)	3
FCSC	1140 or 1141	3
HLED	1006	3
MATH	1400, 1405, or 1450 (QA)	3
KIN	1000	2
KIN	1004 (I, L)	3
KIN	1025	2
KIN	2000	2
KIN	2025	2
KIN	2040 (SB)	3
KIN	2041 (SB)	1
KIN	3115	4
KIN	3025 (CA)	2
PEAC	1001 (P)	1
PHYS	1050 or 1110	4
POLS	1000 (V)	3
PSYC	1000 (CS)	3
THEA	3025 (CA)	1
STAT	2050 or 2070 (QB)	4
USP Diversity Course (D)		3
USP Global Awareness Course (G)		3
Total Hours		69

In the spring semester of their sophomore year, students must make application for admission to the final two years of the Physical Education Teacher Education (PHET) program (professional program). This includes a \$30.00 application fee, completion of coursework specific to the first two years of the program, a minimum grade point average of 2.75, completion of 60 contact hours with youth in a movement setting, completion of a written essay, and an interview. Admission to the PHET program is a competitive process and applicants meeting the minimum requirements are not guaranteed admission to the major.

B. JUNIOR-SENIOR YEARS (professional)

i. Required Courses (53 hours)

EDSE	3540	2
EDAD	4215 or KIN 4013	3
HLED	1221 or Red Cross CPR First Aid	2
KIN	3011	3

KIN	3012	2
KIN	3015 (WC)	3
KIN	3021	4
KIN	3034	3
KIN	3037 or 3038	3
KIN	3042	3
KIN	3050	2
KIN	4012	2
KIN	4017	4
KIN	4055	2
KIN	4080 (WC)	3
KIN	4099	12

ii. Electives (2 hours)

Minimum Total Hours 120

III. Additional School Endorsements K-12

In addition to completing the Bachelor of Science degree in physical education teacher education from the University of Wyoming, students can qualify for K-12 certifications in adapted physical education and/or health education by completing the following course requirements:

A. Adapted Physical Education K-12

KIN	4065	3
KIN	4075	3
EDEX	2484	3

B. School Health Education K-12

HLED	3010	3
HLED	4025 or SOC 2200	3
HLED	4110	3
HLED	4130	3
PSYC	2210	3

IV. Affiliated Options

The Division of Kinesiology and Health offers two options for the general undergraduate population. They require course work above and beyond degree requirements.

A. Athletic Coaching Permit

Students who wish to qualify for an athletic coaching permit to coach in Wyoming public schools must complete four courses.

HLED	1221	2
KIN	3050	2
KIN	2080-2089	2
KIN	4090	3

B. School Health Education K-12

In addition to completing a bachelor's degree in teaching from an approved university program, 25 credit hours are required to be certified to teach health education K-12 in the public schools of Wyoming.

FCSC	1140 or 1141	2-3
HLED	1006	3
HLED	1221 or Red Cross CPR/First Aid	2
HLED	3010	3
HLED	4025 or SOC 2200	3
HLED	4110	3
HLED	4130	3
PSYC	2210	3

Physical Education Activity (PEAC)

Program activity-theory courses for men and women. All activity classes are offered for S/U grade only, with the exception of 2000. Physical education activity courses may not be offered every semester.

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↯QB]).

1000. P.E. Activity in _____. 1/2 (Max. 1). Provides instruction in special and/or unique sport, dance or exercise on a temporary basis.

1001. Physical Activity and Your Health.

1. [P1↯P] Designed to help students gain an understanding of the impact physical activity or inactivity has on their health. Students gain the knowledge, skills, and experience that enable them to make informed decisions about their own health as it relates to their quality of life and longevity. **NOTE:** All students must enroll in a PEAC 1001 activity as part of the PEAC 1001 experience.

1012. Beginning Swimming. 1/2. Instructs the non-swimmer in skills suggested by the Red Cross.

2000. Wellness: Physical Education Concepts. 1.

Lecture/laboratory course. Explores relationship between lifestyle (diet, exercise, etc.) and personal wellness. Emphasizes the role of exercise. Fulfills university physical education requirement for students who entered UW prior to fall 1999. Offered for grade.

Varsity Athletics (PEAT) (Men and Women)

The following activities are for enrollment only by members of intercollegiate athletic teams. Participation in these activities will not satisfy the PEAC requirements.

2010. Varsity Swimming. 1/2.

2051. Varsity Golf. 1/2

2054. Varsity Track and Field. 1/2.

2056. Varsity Tennis. 1/2.

2062. Varsity Basketball. 1/2.

2063. Varsity Football. 1/2.

2064. Varsity Volleyball. 1/2.

2065. Varsity Pepsters. 1/2.

2070. Varsity Rodeo. 1/2.

2071. Varsity Soccer. 1/2.

Kinesiology (KIN)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2◀QB]).

1000 [PEPR 1000]. Movement Core I: Swimming and Gymnastics. 2. Provides students with skills and knowledge necessary to teach basic tumbling, apparatus and swimming skills to public school students.

1004 [PEPR 1004]. Foundations of Physical Education. 3. [(none)◀I, L] An introductory course designed to acquaint first year or second year students to the academic discipline of physical education with an emphasis on the teaching career. Cross listed with HLED 1004.

1005 [PEPR 1005]. Introduction to Kinesiology and Health Promotion. 2. [(none)◀I, L] A survey of the discipline of kinesiology and health promotion. Students master knowledge specific to kinesiology and health promotion, develop critical thinking skills, and develop basic competence in communication skills and information literacy.

1025 [PEPR 1025]. Movement Core II: Striking and Volleying. 2. Provides PETE majors with necessary knowledge to teach striking and volleying at the precontrol, control, utilization and proficiency levels of skill proficiency to learners K-12. *Prerequisites:* none.

1052 [PEPR 1052]. Introduction to Athletic Training. 3. Provides the prospective athletic trainer with the skill and knowledge necessary to improve a risk management and preventative program for athletes and others involved in physical activity.

1058 [PEPR 1058]. Emergency Management of Athletic Injury/Illness. 3. Provides the prospective athletic trainer with the skill and knowledge necessary to provide for emergency care, triage, and management of emergencies and life-threatening situations for the physically active.

2000 [PEPR 2000]. Movement Core III: Kicking, Dribbling, Throwing and Catching. 2. Exposes students to the skill themes of kicking, dribbling, throwing and catching. Teaches kicking, dribbling, throwing and catching in relation to movement concepts and levels of skill proficiency (precontrol, control, utilization and proficiency). At the proficiency level, students receive instruction specific to the skills performed in activities such as soccer, basketball, track and field, softball, handball and football.

2010 [PEPR 2010]. Field Experience for Prospective Elementary and Secondary Teachers. 1-4 (Max. 4). Provides initial experience in the public school setting. Full-time assignment of one to four weeks in a public school under supervision of a certified teacher. Students serve as teacher aides.

2012 [PEPR 2012]. Physical Education for Elementary Schools. 2. Emphasizes impact that a sound elementary physical education program can have on growth and development of healthy children. Students identify the need for a balanced physical education program. Focuses on curriculum, teaching styles, class management and instruction. *Prerequisite:* EDFD 2040 or consent of instructor.

2015 [PEPR 2015]. Methods of Teaching Social Dance Forms. 1. Develops a large repertoire in folk, square, round and social dance. Students acquire knowledge and confidence in methods of teaching these forms. *Prerequisite:* KIN 1031.

2017 [PEPR 2017]. Water Safety Instructors' Course. 1. Examines procedures and standards as required by the American Red Cross in analysis, performances and teaching techniques. Includes five styles of swimming and senior lifesaving. *Prerequisites:* 18 years of age and a current Senior Life Saving Certificate.

2025 [PEPR 2025]. Movement Core IV: Physical Fitness and Physical Activity 2. [P1◀(none)] Designed for prospective school-based physical and health education teachers K-12. Focuses on five primary content areas: what is fitness education and why do we need it; development of concepts-based fitness curriculum; teaching cognitive aspects of fitness education; teaching physical aspects of fitness education; and promoting fitness education.

2030 [PEPR 2030]. Motor Learning. 3. Attempts to improve quality of instruction in kinesiology through understanding of research problems, trends and teaching methods in motor learning. *Prerequisite:* sophomore standing. (Offered fall and spring semesters)

2040 [PEPR 2040]. Human Anatomy. 3. [S1◀SB] Study of human structure in terms of its microscopic and gross anatomy. Provides students with adequate background to study human physiological function. The corresponding course, to be taken concurrently, is ZOO/KIN 2041. Cross listed with ZOO 2040. *Prerequisite:* LIFE 1000 or 1010.

2041 [PEPR 2041]. Human Anatomy Laboratory. 1. [S1◀SB] A laboratory study of human structure in terms of human microscopic and gross anatomy. This laboratory course is designed to provide students with an adequate background to study human physiology and kinesiological function. *Prerequisite:* KIN/ZOO 2040 or concurrent enrollment in KIN/ZOO 2040.

2057 [PEPR 2057]. Assessment and Evaluation of Athletic Injury/Illness I. 3. Provides the prospective athletic trainer with the skill and knowledge necessary to evaluate and recognize upper extremity, cervical spine, and head injuries that occur to the athlete and physically active. *Prerequisites:* KIN 1052, 1058, 2040, and 2041; concurrent enrollment in KIN 2068.

2058 [PEPR 2058]. Assessment and Evaluation of Athletic Injury/Illness II. 3. Provides the prospective athletic trainer with the skill and knowledge necessary to evaluate and recognize lower extremity and spine injuries that occur to the athlete and physically active. *Prerequisites:* KIN 2057; concurrent enrollment in KIN 2078.

2068. Athletic Training Clinical I. 1. Provides clinical and field experience for the athletic training student. Skill and knowledge learned in KIN 1052 and 1058 are applied in the clinical and field settings. *Prerequisites:* KIN 1052, 1058, 2040, and 2041; concurrent enrollment in KIN 2057.

2069 [PEPR 2069]. History and Philosophy of Sport. 3. Discusses history of sport with emphasis on contributions of Greeks and Romans. Studies influence of Scandinavian countries, Germany and other European nations, plus sports and games of the American Indians. Includes sports in the U.S. from colonial period through present and influence of selected educational philosophers on sports. (Offered fall semester)

2078. Athletic Training Clinical II. 1. Provides clinical and field experience for the athletic training student. Skill and knowledge learned in KIN 1052, 1058, and 2057 are applied in the clinical and field settings. *Prerequisites:* KIN 2057 and 2068; concurrent enrollment in KIN 2058.

2080 [3090, PEPR 3090]. Coaching Football. 2. For those who wish to become proficient in skills and techniques of teaching fundamentals and team organization of modern football. Presents use of audiovisual materials for teaching and scouting purposes. *Prerequisites:* successful completion of USP core requirement I. (Offered spring semester)

2081 [3091, PEPR 3091]. Coaching Basketball. 2. For all men and women wishing to coach basketball. Presents organization of practice schedule, meeting the public, varsity travel and fundamentals of offense and defense. *Prerequisites:* successful completion of USP core requirement I. (Offered fall semester)

2082 [3092, PEPR 3092] Coaching Track and Field. 2. For those interested in teaching or coaching track and field. *Prerequisites:* successful completion of USP core requirement I. (Offered fall semester)

2083 [3093, PEPR 3093]. Coaching Swimming. 2. Acquaints students with many different aspects of aquatics; provides understanding of rhythmical parts of selected swimming strokes; explains water safety; discusses teaching and coaching aspect of a total swimming program. *Prerequisites:* successful completion of USP core requirement I. (Offered fall semester)

2084 [3094, PEPR 3094]. Coaching Wrestling. 2. Acquaints and prepares students with theory and techniques involved in teaching and coaching wrestling. *Prerequisites:* successful completion of USP core requirement I. (Offered spring semester)

2085 [3095, PEPR 3095]. Coaching Volleyball. 2. Encompasses techniques of coaching volleyball with emphasis on skill analysis, strategy, team dynamics and training. *Prerequisites:* successful completion of USP core requirement I. (Offered fall semester)

2086 [3096, PEPR 3096]. Coaching Gymnastics. 2. Helps students organize and administer competitive gymnastics program and introduces coaching and training philosophies used in gymnastics. *Prerequisites:* successful completion of USP core requirement I. (Offered fall semester)

2087 [3097, PEPR 3097]. Coaching Baseball. 2. Encompasses theories and techniques of coaching baseball. Emphasizes team and individual position play. *Prerequisites:* successful completion of USP core requirement I. (Offered fall semester)

2088 [3098, PEPR 3098]. Coaching Tennis. 2. Examines techniques of coaching tennis. Emphasizes skill analysis, strategy and training. *Prerequisites:* successful completion of USP core requirement I. (Offered spring semester)

2089 [3099, PEPR 3099]. Coaching Soccer. 2. Explores techniques of coaching soccer. Emphasizes skill analysis, strategy, team dynamics and training. *Prerequisites:* successful completion of USP core requirement I.

2091 [PEPR 2091]. Rules and Techniques of Athletic Officiating I. 2. Surveys techniques and rules of athletic officiating. Emphasizes principles and procedures necessary to become an effective official. Laboratory experience in officiating is provided that covers the officiating aspects of football, cross country, basketball and wrestling.

2092 [PEPR 2092]. Rules and Techniques of Athletic Officiating II. 2. Surveys techniques and rules of athletic officiating. Emphasizes principles and procedures necessary to become an effective official. Provides laboratory experience in officiating, covering officiating aspects of swimming, volleyball, track and field and baseball.

2900. Topics In: ____ 1-3 (Max. 3). Course Topics could include Peer Health Education, Current Issues in Health, etc. *Prerequisite:* sophomore standing.

3010 [PEPR 3010]. Fundamentals of Health and Fitness Assessment. 3. Students will learn the fundamental concepts of health appraisal, assessment of health-related fitness and physical fitness levels, individual and group exercise programming and leadership, and methods of behavioral change. Fitness will be discussed in both theoretical and practical terms with an emphasis on adults. Has lecture and lab components. *Prerequisites:* completed or concurrent enrollment in KIN 3021; 2.5 GPA.

3011 [PEPR 3011]. Teaching Methods in Physical Education. 3. Develops knowledge, skills and understandings appropriate to successful participation in a class setting when functioning in the teaching role. *Prerequisites:* grade of C or better in KIN 3012 and 3034; 2.75 minimum GPA; concurrent enrollment in KIN 3015.

3012 [PEPR 3012]. Teaching Laboratory I. 3. Provides the opportunity to develop skills and acquire knowledge needed to teach physical education. Allows the opportunity for students to evaluate the motor status and progress of a preschool aged child, as well as plan and implement a developmentally appropriate motor program. *Prerequisites:* Completed KIN 1000, 1004, 1025, 2000, 2025, 3025, and THEA 3025; concurrent enrollment in KIN 3034; 2.5 GPA. (Offered fall semester)

3015 [PEPR 3015]. Teaching Laboratory II. 3. [(none)♦WC] Provides pre-service physical education teacher with skills, knowledge and principles of teaching through application of peer teaching and small group elementary school teaching. Emphasizes and practices program development, lesson planning and development of a physical education teaching unit. *Prerequisites:* grade of C or better in KIN 3012 and 3034; 2.75 minimum cumulative GPA; concurrent enrollment in KIN 3011, 4055 and 4080. (Offered spring semester)

3020 [PEPR 3020]. Observational Experience in Movement Science. 1-2 (Max. 6). Provides students with off-campus opportunity to observe professionals in the work place. Emphasis is placed on physical or occupational therapy. Conducted under supervision and arranged by coordinator of undergraduate programs. Offered S/U only. *Prerequisites:* sophomore status, consent of coordinator of undergraduate programs, 2.5 GPA.

3021 [PEPR 3021]. Physiology of Exercise. 4. [M3♦(none)] Applies physiological principles to human physical activities. Emphasizes interaction of neuromuscular, circulatory and respiratory mechanisms as affecting, and affected by, immediate exercise situation and physical training. Includes laboratory. Cross listed with ZOO 3021. *Prerequisites:* QA, KIN/ZOO 2040 and 3115; minimum 2.5 GPA. (Offered fall and spring semesters)

3025 [PEPR 3025]. Movement Core V: Folk, Square and Social Dance. 2. [C3♦CA] Reviews concepts and skills and rhythmic fundamentals. Introduces social, folk and square dances. A performance class, which provides the opportunity for self awareness and self expression through in-class experiences in dance. Students discuss the importance of studying and teaching dance, and research the music, dance step, costume and mannerisms of a specified country. *Prerequisites:* junior standing and 2.5 GPA or consent of instructor.

3034 [PEPR 3034]. Lifespan Motor Development. 3. Studies lifespan motor development. Emphasizes developmental periods of infancy through adolescence. Gives attention to observation and analysis of motor behavior and movement performance of individuals across lifespan. *Prerequisites:* PSYC 1000; junior status; 2.50 GPA. (Offered fall semester)

3037 [PEPR 3037]. Sport Psychology. 3. Studies psychological theories and techniques applied to sport to enhance the performance and personal growth of athletes and coaches. Emphasizes the influence of personality, anxiety, motivation, social factors, and psychological skills training. *Prerequisite:* Admitted to the last two years of one of the programs in DK&H. *Prerequisites:* PSYC 1000, junior status and 2.50 GPA.

3038. Exercise Psychology. 3. Studies psychological theories for understanding and predicting health-oriented exercise behavior, including psychological intentions for increasing exercise participation and adherence. Emphasizes psychological and psychobiological responses to exercise. *Prerequisites:* admitted to the last two years of one of the programs in DK&H.

3040 [PEPR 3040]. Teaching Human Anatomy. 3. Students develop communication and teaching skills while expanding their knowledge in anatomy. Under faculty instruction, each student develops lecture and laboratory lessons for all human anatomy systems. Under direct faculty supervision, each student demonstrates their teaching skills through preparation of videotape segments and actual laboratory teaching experience in the lower-division human anatomy course. *Prerequisites:* KIN/ZOO 2040, junior status and consent of instructor.

3042 [PEPR 3042]. Biomechanics of Human Movement. 3. Introduces fundamental principles of human movement. Includes study and elementary analysis of human motion based on anatomical and mechanical principles. *Prerequisites:* KIN/ZOO 2040; PHYS 1050 or 1110 or 1210 or 1310; minimum 2.5 GPA.

3050 [PEPR 3050]. Prevention and Care of Athletic Injuries. 2. Encompasses theory and practical work in the field of athletic training. Strongly emphasizes prevention and care of athletic injuries, including wrapping and taping techniques. *Prerequisites:* junior status; LIFE 1000 or 1010; minimum 2.5 GPA.

3052 [PEPR 3052]. Rehabilitation of Athletic Injuries. 3. Provides a foundation of appropriate rehabilitation principles and techniques based on current research/rationale. The scope is inclusive of approaches applicable to common sports medicine problems. *Prerequisites:* KIN 2058 and 2078; minimum GPA of 2.50.

3058 [PEPR 3058]. Therapeutic Modalities for the Athletic Trainer. 3. Provides the prospective athletic trainer with the knowledge and skill necessary to use therapeutic modalities for the health care of the physically active. *Prerequisites:* KIN 3052 and 3068; minimum GPA of 2.50.

3068. Athletic Training Clinical III. 2. Provides clinical and field experience for the athletic training student. Skill and knowledge learned in KIN 2057 and 2058 are applied in the clinical and field settings. *Prerequisites:* KIN 2058 and 2078; concurrent enrollment in KIN 3052; minimum GPA of 2.50.

3078. Athletic Training Clinical IV. 2. Provides clinical and field experience for the athletic training student. Skill and knowledge learned in KIN 2057, 2058, and 3052 are applied in the clinical and field settings. *Prerequisites:* KIN 3052 and 3068; concurrent enrollment in KIN 3058; minimum GPA of 2.50.

3115. [KIN 2110, PEPR 2110]. 4. Human Systems Physiology. Covers the fundamental function(s) of the human body systems, from cells and tissues through organs and systems, focusing also on biological communication and homeostasis. Students learn how to interpret physiological data. Includes laboratory and tutorial sessions. Fulfills degree requirement in physiology subsection for zoology major. Cross listed with ZOO 3115. *Prerequisites:* grade of C or above in LIFE/BIO; CHEM 1020 (preferred) or CHEM 1000; sophomore standing.

4001 [PEPR 4001]. Short Course in Physical Education for Undergraduates. 1-6 (Max. 6). Highlights special topics in kinesiology at the undergraduate level, based on need. Maximum allowable credit is 6 semester hours. Offered S/U only. *Prerequisites:* junior status and 2.50 cumulative GPA.

4012 [PEPR 4012]. Curriculum Development in Physical Education. 2. Provides understanding of functions of a physical education curriculum and students' role in its planning, implementation and evaluation. *Prerequisites:* grade of C or better in KIN 3011, 3015 and 4080; 2.75 minimum cumulative GPA; concurrent enrollment in KIN 4017. (Offered fall semester)

4013. School Administration for the Health Sciences. 3. Course provides teaching majors with information about staff-administrator relationships in school settings. Topics include principles of leadership, school organization and culture, legal issues, community issues pertaining to schools, curriculum and instruction, financial issues, building and facilities management, discipline and decision making. *Prerequisites:* senior status or minimum GPA of 2.50.

4015 [PEPR 4015]. Internship Experience in Kinesiology. 1-12 (Max. 12). Provides culminating clinical experience at a business, industry or institution related to students' aspirations and training. Conducted under Kinesiology departmental faculty member. Offered S/U only. Cross listed with HLED 4015. *Prerequisites:* junior standing, KIN 3021; 2.50 GPA.

4016. Research Experience in Kinesiology and Health. 3-6 (Max. 6). Offered to students who wish to gain a research experience in Kinesiology and Health. Meant for students who are interested in pursuing an advanced

degree. Students may choose to complete KIN/HLED 4016 instead of KIN/HLED 4015. Cross listed with HLED 4016. *Prerequisites:* minimum junior standing; completed KIN 3021; minimum 2.50 GPA.

4017 [PEPR 4017]. Teaching Laboratory III. 4. Provides students opportunity to teach an elementary and secondary physical education unit in a school setting. Allows students to develop teaching progression, analyze sport skills, and develop effective management system. *Prerequisites:* grade of C or better in KIN 3011, 3015, and 4080; 2.75 minimum cumulative GPA; concurrent enrollment in KIN 4012. (Offered fall semester)

4029 [PEPR 4029]. Methods of Training and Conditioning. 3. Gives students knowledge and experience needed to develop and lead exercise training programs. Of interest to teachers, coaches and fitness leaders. *Prerequisites:* junior standing, KIN 3021 and minimum 2.50 GPA. (Offered spring semester)

4042. Advanced Biomechanics. 3. Provides in-depth understanding of principles of motion and the application of these principles to human movement. Emphasis on combining the mechanics of movement with the biological aspects of anatomy and physiology. Discussion on the basics of movement control and the effects of fatigue on movement. *Prerequisites:* KIN 3042; minimum GPA of 2.50.

4052 [PEPR 4052]. General Medical Conditions for the Athletic Trainer. 3. Provides the prospective athletic trainer with the knowledge and skill necessary to recognize, manage, and refer the general medical conditions, disabilities and pathologies that occur to athletes and the physically active. *Prerequisites:* KIN 3058 and 3078; concurrent enrollment in KIN 4068; minimum GPA of 2.50. (Offered fall semester)

4055 [PEPR 4055]. Adapted Physical Education. 2. Presents skills necessary to plan, implement and evaluate individualized physical education programs in the least restrictive environment. Acquaints students with current laws, characteristics, assessment instruments and nationally validated programs in physical education for the disabled child. *Prerequisites:* KIN 3034 and 2.50 GPA. (Offered spring semester)

4056 [PEPR 4056]. Advanced Exercise Testing and Prescription. 4. Teaches foundational electrocardiography to perform graded exercise stress tests (GXT), performance of GXT's to health and diseased populations based on a health appraisal assessment. Knowledge used to develop comprehensive exercise prescriptions, make metabolic calculations. Emphasis on how physical activity, nutrition/weight management, and behavioral factors interact with exercise programming. Dual listed with KIN 5056. *Prerequisites:* completion of KIN 3010 and 3021; 2.5 GPA; CPR Certification.

4058 [PEPR 4058]. Organization, Administration, and Pharmacology for the Athletic Trainer. 3. Provides the prospective athletic trainer with the knowledge and skill necessary to better understand the pharmacology and administration of athletic health management. *Prerequisites:* KIN 3052 and 3068; concurrent enrollment in KIN 3058 and KIN 3078; minimum GPA of 2.50. (Offered spring semester)

4062. Applied Concepts in Human Aging. 3. Designed to integrate and apply concepts acquired in core KIN and HLED courses (e.g. human physiology, exercise physiology, health promotion, etc.) to the growing of older/aging adults. Age-related pathologies will be presented and discussed as will be the scientific method. *Prerequisites:* KIN 3021; minimum 2.5 GPA; junior standing.

4065 [PEPR 4065]. Resources in Adapted Physical Education. 2-3 (Max. 3). Offers flexible credit for students interested in pursuing intensive study of resources for adapted physical education. Required for state endorsement in Adapted Physical Education. *Prerequisites:* junior status, KIN 4055 and minimum 2.50 GPA.

4066. Biological Factors Influencing Exercise Performance. 3. Application of physiological responses to exercise to special conditions. A focus on skeletal muscle fiber typing and the importance of fiber type distribution in athletics. Factors like nutritional needs of athletes, use of ergogenic aids, the female and child athlete, exercise in "hostile" environments, and long term competitive events covered. *Prerequisite:* KIN 3021; 2.50 GPA.

4068. Athletic Training Clinical V. 3. Provides clinical and field experience for the athletic training student. Skill and knowledge learned in KIN 3052 and 3058 are applied in the clinical and field settings. *Prerequisites:* KIN 3058 and 3078; concurrent enrollment in KIN 4052; minimum GPA of 2.50.

4074 [PEPR 4074]. Field Studies in _____ 1-5 (Max. 12). Offered only through extension services. Broad and flexible and can be utilized in numerous situations to meet local needs. (Credit in this course is not applicable toward advanced degrees.) Cross listed with HLED 4074. Offered for S/U grade only.

4075. Assessment in Adapted Physical Education. 3. Designed to provide an overview of the assessment process in adapted physical education. Developmentally and disability appropriate psychomotor assessments and procedures for administering them are examined. *Prerequisites:* KIN 4055, KIN 4080.

4080 [PEPR 4080]. Assessment in Physical Education. 3. [(none)↔WC] Provides prospective teachers with a thorough knowledge of learner assessment as applied to physical education K-12. *Prerequisites:* grade of C or better in KIN 3012 and 3034; 2.75 minimum cumulative GPA. (Offered spring semester)

4085 [PEPR 4085]. Honor Studies in Physical Education. 2-10 (Max. 10). Provides flexible credit for undergraduate honor students to study under distinguished faculty in a specialized academic area of interest at UW or any other approved college or university. *Prerequisites:* 3.00 cumulative GPA and admission to physical education honors program.

4086 [PEPR 4086]. Honors Seminar. 2. Independent study. Consists of in-depth application of experimental techniques and materials to appropriate academic areas which directly support students' majors. Offered for S/U grade only. *Prerequisites:* 3.00 cumulative GPA and admission to physical education honors program.

4088. Athletic Training Clinical VI. 3. Provides clinical and field experience for the athletic training student. Skill and knowledge learned in KIN 3052, 3058 AND 4052 are applied in the clinical and field settings. *Prerequisites:* KIN 4052 and 4068; concurrent enrollment in KIN 4058; minimum GPA of 2.50.

4090 [PEPR 4090]. Foundations of Coaching. 3. Coaching means having knowledge and skill in coaching theory, teaching methodology, administration and management, psychology, sociology, exercise physiology and other areas. Provides prospective coaches with current information about scientific foundations of coaching. Content is required for application of Athletic Coaching Permit in Wyoming. *Prerequisites:* junior status and 2.5 cumulative GPA.

4097 [PEPR 4097]. Individual Problems. 1-3 (Max. 6). Provides flexible credit for juniors and seniors who wish to undertake intensive study of a special problem in physical education. Offered S/U grade only. *Prerequisites:* junior status and 2.50 GPA.

4099 [PEPR 4099]. Student Teaching in Physical Education. 1-16 (Max. 16). Student teaching is the culminating experience required of all students in teacher education for graduation and recommendation for certification. Consists of full-time assignment of 16 weeks in an approved school station in Wyoming under supervision of an experienced, approved supervising teacher. Offered for S/U grade only. *Prerequisites:* Completion of KIN 4012 and 4017; 2.5 GPA; consent of coordinator of student teaching in physical education.

4900. Topics in: _____. 1-3 (Max. 9) The study of current topics not included in more formal course offerings in kinesiology and health. *Prerequisite:* KIN 3021.

Health Education (HLED)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1006. Personal Health. 3. Acquaints students with a variety of personal health issues: from the importance of physical activity and exercise, to how to manage stress and social pressures. Students learn how to better care for their bodies and change and modify health behaviors that could be detrimental. Students also learn how to improve their current state of overall health and well being.

1221. Standard First Aid and Personal Safety. 1-2 (Max. 2). Studies accident prevention, examination procedures and first aid care for victims of accidents or sudden illness before medical assistance is available. Presents new Red Cross content and CPR. CPR is incorporated in the sections offered for 2 credit hours.

2006. Health for Elementary Educators. 1. Acquaints students to the Wyoming Health Standards and Benchmarks, techniques/instruments for assessing they Wyoming Health Standards and Benchmarks, sample health curriculum models/approaches for elementary school K-6, lesson plans in health education for elementary learners, and health integration in language arts curricula. *Prerequisite:* elementary education majors with sophomore standing.

2221. Instructor's Course in First Aid/CPR 2. Designed to certify the student to teach the following American Red Cross courses: CPR for the professional rescuer and First Aid: responding to emergencies. *Prerequisite:* current certification in First Aid/CPR.

2900. Topics In: _____. 1-3 (Max. 3). Course Topics could include Peer Health Education, Current Issues in Health, etc. *Prerequisite:* sophomore standing.

3000. Foundations of Health Promotion and Health Education. 3. Introduces basic concepts and theories that form the foundation of the health promotion and education profession. Stresses experiences that are designed to acquaint students with the fundamentals of professional practice and to serve as a basis for future health promotion and education study. *Prerequisites:* HLED 1006, junior class standing, 2.5 GPA.

3010. Contemporary Issues in Health and Health Education. 3. Addresses contemporary problems and issues in health. Views contemporary topics from ethical, as well as public health and school health, perspectives. Required for state endorsement in health education. *Prerequisites:* junior status, HLED 1006 and minimum 2.50 GPA.

3020 [4050]. Community and Public Health Promotion. 3. Increase student knowledge of community development processes and their application in addressing factors that affect the health of the U.S. population. Unique assets, needs, and health issues of specific populations will be highlighted. Emphasis given to program

development processes related to protecting or improving the health of given populations. *Prerequisites:* HLED 1006; sophomore or junior standing; admission to K&HP or K&HP-AT professional program or minimum 3.00 cumulative UW GPA.

4004. Needs Assessment and Program Planning. 3. Focuses on needs assessment and program planning in the health education process. Extensive time is spent learning, analyzing, and applying a variety of needs assessment methods. The impact of extensive community needs assessment on planning effective community programs and interventions are examined. Additional emphasis is placed on the methods necessary for planning effective health promotion programs. Dual listed with HLED 5004. *Prerequisites:* HLED 3000 and 2.5 GPA.

4010. Program Evaluation and Grant Writing. 3. Provides students with an in-depth examination of program evaluation techniques and methodology as they apply to the evaluation of health promotion programs. Students gain an understanding of how to identify funding opportunities (grants) and how to prepare grant proposals. Dual listed with HLED 5010. *Prerequisites:* HLED 4004.

4015. Internship Experience in Health. 1-12 (Max. 12). An internship experience in health education/promotion for health majors. May take from 1-12 credits at a time for a required cumulative maximum of 12 credits. S/U only. Cross listed with KIN 4015. *Prerequisites:* minimum 2.50 GPA; junior or senior status.

4016. Research Experience in Kinesiology and Health. 3-6 (Max. 6). Offered to students who wish to gain a research experience in Kinesiology and Health. Meant for students who are interested in pursuing an advanced degree. Students may choose to complete KIN/HLED 4016 instead of KIN/HLED 4015. Cross listed with KIN 4016. *Prerequisites:* minimum junior standing; completed KIN 3021; minimum 2.50 GPA.

4025. Teaching Sensitive Issues In Human Sexuality. 3. Prepares educators and other helping professionals whose work involves promoting healthy sexuality in children, young people, and adults. It also provides detailed investigation into important aspects of teaching sensitive issues related to human sexuality. Students practice, critique, develop, and evaluate sexuality education processes and resources. Dual listed with HLED 5025. *Prerequisites:* junior class standing, 2.5 GPA, and SOC 2200.

4040. Stress Management. 3. The stress process and its relationship to the concept of total health. The physical and psychological effects of stressors and individual appraisals will be explained using theoretical models and practical examples. Students learn how to personally identify and manage stress in a healthy manner. Emphasis is placed on learning effective skills to reduce harmful effects of stress. *Prerequisites:* junior class standing for HLED 4040 and graduate standing for HLED 5040.

4074. Field Studies in _____. 1-5 (Max. 12). Offered only through extension services. Broad and flexible and can be utilized in numerous situations to meet local needs. (Credit in this course is not applicable toward advanced degrees.) Cross listed with KIN 4074. Offered for S/U grade only.

4097. Individual Problems. 1-9 (Max 9). Provides flexible credit for students who wish to undertake intensive study and/or experiential activities in health education. Offered for S/U grade only. *Prerequisite:* consent of instructor.

4110. Teaching Health in Schools K-12. 3. Acquaints students with health problems of today's school child, recognition of the problems and various methods of handling them. *Prerequisites:* HLED 1006, junior status and 2.50 GPA. (Offered fall semester)

4130. Management of Coordinated School Health Programs. 3. Reviews the coordinated school health program (CSHP) model and identifies research that supports the eight components of the model. Prepares students to advocate for CSHP and to develop the school infrastructure necessary to carry out such a program. Also prepares individuals to work with school from job settings outside the school. Dual listed with HLED 5130. *Prerequisites:* HLED 1006 and 3010, junior standing and 2.5 GPA. (Offered fall semester)

4900. Topics in: _____. 1-3 (Max. 9) Integrates kinesiology and/or health concepts necessary for graduates in multiple professions. Provides experiential learning and training for success in allied healthcare fields. Students may develop and present projects that relate their education and training to a hypothetical work-place environment. *Prerequisite:* KIN 3021.

4970. Field Experience in Health Education. 1 - 12 (Max. 12). Offered as practical health education experience for senior level health education majors. Students may take from 1 -12 credits at a time for a required cumulative maximum of 12 credits. Broad and flexible and can be utilized in numerous situations to meet local needs. (Credit in this course is not applicable toward advanced degrees.) For S/U grade only. *Prerequisites:* senior standing and consent of instructor.

Life Sciences Program
138 Aven Nelson Building, 766-4158
FAX: (307)766-2851
Web site: www.uwyo.edu/lifescience
Program Director: Mark E. Lyford

The Life Sciences Program consists of all LIFE prefix courses. These courses support the life science majors and several non-life science majors across campus. The number of LIFE courses taken by life science and other majors is determined by the departments that offer the majors. The curriculum intends to provide life-science majors with both breadth and depth in the basic life sciences, and non-science majors with exposure to key concepts in biology and an understanding of the connections between science and society. The program courses also expose students to the fields of cell and molecular biology, genetics, ecology, and evolution, and they familiarize students with the diversity of life on the planet. Courses within the curriculum address four fundamental goals at a level appropriate for each course: 1) Acquisition, Application and Synthesis of Knowledge, 2) Communication Skills, 3) Critical Thinking and Problem Solving, and 4) Research Skills.

For information on LIFE course offerings, please refer to the Life Sciences Program entry in the College of Arts and Sciences.

Division of Medical Education and Public Health

Family Medicine Residency Programs

Casper: Stephan Trent, Director
 (307) 233-6020

Cheyenne: James Broomfield, Director
 (307) 777-7911

WWAMI Medical Education Program

Laramie: Matthew McEchron, Director
 (307) 766-2496

Web site: www.uwyo.edu/wwami

Professors:

WALTER G. (JERRY) SAUNDERS, M.D. University of Colorado Health Sciences Center 1966; B.S. University of Wyoming 1996; Clinical Professor 2007.

Associate Professors:

JAMES F. BROOMFIELD, B.S. University of Arkansas 1986; M.D. 1990; Associate Professor of Family Medicine, Cheyenne 2005, 1999.

RONALD L. MALM, B.S. University of Wyoming 1988; D.O. The University of Health Sciences, College of Osteopathic Medicine 1992; Associate Professor of Family Medicine, Cheyenne 2005, 1999.

MATTHEW McECHRON, B.S. University of Iowa 1990; M.S. University of Miami 1993; Ph.D. 1995; Associate Professor, WWAMI Medical Education Program 2008.

DOUGLAS S. PARKS, B.S. Baker University 1978; M.D. University of Kansas 1984; Associate Professor of Family Medicine, Cheyenne 1999, 1993.

BETH ROBITAILLE, B.A. University of Notre Dame 1991; M.D. Creighton University School of Medicine 1995; Clinical Associate Professor of Family Medicine, Casper 2007, 2002.

STEPHAN N. TRENT, B.A. University of Tennessee 1973; D.O. University of Health Sciences 1980; Clinical Associate Professor of Family Medicine 2007, 2002.

Assistant Professors:

DEAN W. BARTHOLOMEW, B.A. Hastings College 1997; M.D. Creighton University School of Medicine 2001; Clinical Assistant Professor 2008.

LISA K. BRANDES, B.S. Kansas State University 1987; M.D. University of Kansas School of Medicine 1993; Clinical Assistant Professor 2006.

WHITNEY A. BUCKLEY, PharmD University of Wyoming 2004; Clinical Assistant Professor 2008.

FREDERICK DREILING, B.A. Oberlin College 1972; Ph.D. University of North Carolina 2002; Clinical Assistant Professor, WWAMI Medical Education Program 2008.

HELENIAMS, B.A. Mary Baldwin College 1987; M.S. University of Southern California 1990; M.D. Loyola University Chicago 2000; Sports Medicine Fellowship 2004; Clinical Assistant Professor of Family Medicine, Cheyenne 2003.

RAYMOND B. JOHNSON, B.S. Chadron State College 1968; B.S. St. Johns Hospital-South Dakota 1969; B.S. Emory University 1973; Assistant Professor of Family Medicine, Casper 1979.

MICHAEL MILLER, B.A. Wheaton College 1992; D.O. Kirksville College of Osteopathic Medicine 2000; Clinical Assistant Professor of Family Medicine, Casper 2004.

ROBERT M. MONGER, B.A. Augustana College 1988; M.D. University of Utah School of Medicine 1992; Clinical Assistant Professor 2008.

THOMAS E. RADOSEVICH, B.S. University of Wyoming 1990; M.D. Creighton University School of Medicine 1999; Clinical Assistant Professor of Family Medicine 2008.

G. DOUGLAS SCHMITZ, B.S. and M.D. University of Nebraska Medical School 1979; Clinical Assistant Professor 2008.

AMY TRELEASE-BELL, B.S. University of Wyoming 1992; M.D. Creighton University School of Medicine 1996; Clinical Assistant Professor of Family Medicine, Cheyenne 2004.

BRIAN M. VEAUTHIER, B.S. University of Notre Dame 1996; M.D. Georgetown University School of Medicine 2001; Clinical Assistant Professor of Family Medicine 2006.

Associate Lecturer:

COLLEEN HUBBELL, B.A. New School for Social Research 1978; M.S. University of Wyoming 1994; Associate Lecturer, WWAMI Medical Education 2000.

The Division of Medical Education and Public Health provides opportunities for qualified Wyoming students to pursue careers in medicine; supports both undergraduate and graduate medical education programs; promotes high quality continuing education in medicine and other health care fields for Wyoming providers; facilitates increased accessibility of health and medical services in remote and shortage areas; supports interdisciplinary clinical training; and works closely with the Center for Rural Health Research and Education to promote research and programs to address rural/frontier health delivery concerns.

The University of Wyoming medical contract program enhances medical education opportunities for Wyoming residents. In March 1996, the University of Wyoming became a partner in the WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) Program. As a result, students accepted into the medical contract program attend the University of Washington School of Medicine. The first year of this program is taught on campus at the University of Wyoming. The doctor of medicine degree is awarded by the University of Washington. For further information, contact the Preprofessional Advising Office, College of Health Sciences, Laramie, Wyoming 82071. (307) 766-6704.

Because of the need for broadly trained primary care physicians in Wyoming, the Wyoming Legislature has established two residency programs in the specialty of family medicine. These two accredited, university-administered, community-hospital based family medicine residency programs are located in Casper and Cheyenne. They enroll up to 42 residents (14 in each of three years). The two family medicine centers are among the most modern and comprehensively equipped facilities of their kind in the nation and maintain a 1:4 faculty to resident ratio. The program at Casper began in 1976 and is affiliated with Wyoming Medical Center. The program utilized the services and facilities provided by the Community Health Center of Central Wyoming. The Cheyenne program became active in 1980 and is affiliated with United Medical Center. The program utilizes the services and facilities provided by the Veterans Administration and the FE Warren AFB hospitals also located in Cheyenne. Both centers utilize modern design and include spacious examining rooms; treatment and casting rooms; x-ray facilities; offices for faculty, residents and staff; complete laboratories; multiphasic research areas; conference rooms; business offices and roomy waiting rooms with play areas in the clinical component. In the educational component, both include large auditoriums, several classrooms; audio visual

production centers; medical libraries; learning resource centers and administrative offices. Particular emphasis in both centers is placed on preparing physicians for rural practice and other facets of medical practice that are unique to Wyoming.

Wyoming WWAMI Medical Education Program

FIRST YEAR: Fall		Hrs.
HM	6510.....	4
HM	6511.....	6
HM	6512.....	4
HM	6513.....	1
HM	6514.....	3
HM	6516.....	2
HM	6522.....	2
HM	6524.....	2
HM	6526.....	1
HM	6590.....	1
Total Hrs.		26

FIRST YEAR: Spring		Hrs.
HM	6520.....	4
HM	6521.....	4
HM	6523.....	2
HM	6531.....	4
HM	6532.....	5
HM	6534.....	2
HM	6535.....	3
Total Hrs.		24

Human Medicine (HM)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

6510. Microscopic Anatomy: Histology.

4. Lecture/laboratory in microscopic anatomy designed to provide principles/concepts of histology, define morphological characteristics of cells, tissues, organs of human body and relate this information to functional processes studied in concurrent and subsequent courses. For S/U only. *Prerequisites:* admission to the WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6511. Anatomy and Embryology. 6.

Structural organization of human body at the macroscopic level to provide a foundation for physical examination and functional assessment of the human organism. Integrates embryological development with study of cadaver and examination of normal living body. Concentrates on exploration of the body cavities and viscera they contain. For S/U only. *Prerequisites:* admission to the WWAMI program or consent of instructor and approval of WWAMI coordinator or the dean of the College of Health Sciences.

6512. Mechanisms in Cell Physiology. 4.

Physiology of cell membrane, ionic and electrical gradients; active transport, excitability, action potentials; biophysics of sensory receptors; neuromuscular transmission; muscle energetics/contractility; spinal reflexes and central synaptic

transmission; autonomic nervous system; energy metabolism and temperature regulation; epithelial transport; gastrointestinal motility and secretions. For S/U only. *Prerequisites:* admission to the WWAMI program or consent of instructor and approval of WWAMI coordinator or the dean of the College of Health Sciences.

6513. Introduction to Clinical Medicine.

1. Instruction in communication skills and interview techniques to form the basis for the doctor-patient relationship and for the skills of communication with patients. The patient profile is obtained. Attention to developing comfort in the physician role. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6514. Biochemistry 1A. 3.

First portion of a coordinated course covering classical molecular and cellular biochemistry, cellular physiology and molecular genetics. Metabolic interrelationships as they occur in the individual are stressed and related to disturbances in disease states. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or the dean of the College of Health Sciences.

6516. Systems of Human Behavior. 2.

Sensitizes students to the impact of such factors as emotional and physical development, cultural backgrounds, social roles, families, sexual identities and belief systems upon their effectiveness as physicians. Teaches skills in analyzing behavior, defining behavioral objectives and designing precise treatment strategies to attain these objectives. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or the dean of the College of Health Sciences.

6521. Natural History of Infectious Diseases 1A. 4.

Pathogenesis and immunity of infectious diseases, natural barriers. Microbiology, epidemiology, clinical manifestations and control of representative bacterial, fungal, parasitic and viral infectious diseases. Chemotherapeutics and principles of chemotherapy. Sterilization, principles of asepsis, nosocomial and iatrogenic infections and their prevention. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or the dean of the College of Health Sciences.

6522. Introduction to Clinical Medicine.

2. Medical history is introduced and instruction in data collection is begun. Experience in conducting medical interviews with patients to obtain the medical history and patient profile. Special problems related to interviewing are addressed. For S/U Only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6523. Introduction to Immunology. 2. Basic concepts such as antigens; antibodies; complement; B- and T-lymphocyte functioning, including interactions with each other and with accessory cells; immunological tolerance; major histocompatibility complex; and role of these basic concepts in immunopathology (immunodeficiencies, hypersensitivities, autoimmunity, blood transfusion, and transplantation). For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6524. Biochemistry 1B. 2. Second portion of a coordinated course covering classical molecular and cellular biochemistry, cellular physiology and molecular genetics. Metabolic interrelationships as they occur in the individual are stressed and related to disturbances in disease states. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6526. Systems of Human Behavior IB. 1. Effects of behavioral factors in major management problems faced in medical practice relating to cultural background, social role, sexual identity, and belief systems. Acquisition of skills in analyzing behavior, defining objectives and designing precise treatment strategies. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6531. Anatomy of Head and Neck. 4. Gross anatomy (including skull, pharynx and larynx), audition and balance, physiology and clinical evaluation, maxillofacial disorders, diseases of nasal passages, nasopharynx and oropharynx, accessory sinuses. Physical examination. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6532. Nervous System. 5. Integrated approach to normal structure and function of the nervous system, including the eye. Neuropathological examples, as well as clinical manifestations of neurological disease are presented. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6534. Natural History of Infectious Diseases 1B. 2. Pathogenesis and immunity of infectious diseases, natural barriers. Microbiology, epidemiology, clinical manifestations and control of representative bacterial, fungal, parasitic and viral infectious diseases. Chemotherapeutics and principles of chemotherapy. Sterilization, principles of sepsis, nosocomial and iatrogenic infections and their prevention. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6535. Introduction to Clinical Medicine. 3. Adult screening physical examination is taught through the use of lecture, audiovisual aids, and small group tutorial, where students in supervised setting practice the physical examination on one another. Further practice in the performance and recording of the patient profile and medical history. For S/U only. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

6590. Medical Information for Decision Making. 1. Evidence Based Medicine (EBM) is now the predominant model by which medicine is practiced. The goal is to forge critical thinking skills and to teach analysis of the medical literature as a tool. *Prerequisites:* admission to WWAMI program or consent of instructor and approval of WWAMI coordinator or dean of the College of Health Sciences.

Microbiology Program

Program Director: Kenneth Mills

Phone: (307) 766-2029

FAX: (307) 766-3875

E-mail: kmills@uwyo.edu

The Bachelor of Science degree program in microbiology is organized as an interdepartmental major involving the collaborative teaching, advising and research expertise of more than 20 microbiology faculty from the Colleges of Arts and Sciences, Agriculture and Health Sciences. The program is administered by a program director and a coordinating committee which represents each of the participating colleges. Students may obtain their degree in either the College of Arts and Sciences or the College of Agriculture. Please see page 86 for list of faculty and program information.

Fay W. Whitney School of Nursing

**351A Health Sciences Center,
766-4312**

FAX: (307) 766-4294

Web site: www.uwyo.edu/Nursing

Dean: Mary E. Burman

Professors:

MARY E. BURMAN, B.S.N. University of Minnesota 1983; M.S. University of Michigan 1986; Ph.D. 1990; Professor of Nursing 2003; Dean of Nursing 2008.

PAMELA N. CLARKE, B.S.N. Wayne State University 1969; M.P.H. University of Michigan, Ann Arbor 1971; Ph.D. Wayne State University 1983; Professor of Nursing 2003.

PAMALA D. LARSEN, B.S.N. Fort Hays State University 1969; M.S. University of Colorado Health Science Center 1984; Ph.D. University of Northern Colorado 1989; Professor of Nursing 2006; Associate Dean of Nursing 2008.

Associate Professors:

ANN MARIE HART, B.S.N. Medical College of Virginia 1991; M.S. University of Wyoming 1996; Ph.D. University of Colorado at Boulder 2003; Associate Professor of Nursing 2009.

Assistant Professors:

MARY ANNE PURTZER, B.S.N. University of Nebraska 1975; M.A. University of Wyoming 2002; M.S. 2005; Ph.D. 2007; Assistant Professor of Nursing 2008.

Senior Lecturer:

Holly Miller

Associate Lecturers:

Margaret Cashen, Anita C. Deselms, Mary Sue Hager, Sherrie Rubio-Wallace, Linda Williams

Assistant Lecturers:

Karen Benjamin, Penelope Caldwell, Sandy Cole, Constance Diaz-Swearingen, Linda Johnson, Laura Meloche, Dana Murphy-Parker, Kristy Nielson, Lois Pine, Debora Retz, Janet Somlyay

Adjunct Faculty:

Margo Burrows, Sandra Conklin, Leigh Earle, Ann Enlow, Michael Enright, Tracy Farris, Pam Gale, Mary Gills, Julian Good, Jane Hartsock, Sue Hume, Ronda Kinsey, Sue Lowe, Teri Lund, James Martinchick, Susan Nelson, Marcia Newell, Jeanine Niemoller, Karen Ouzts, Shawn Petrini, Thelma Robinson, Phyllis Schulz, Scott Seys, Patty Sherard, Marsha Siegel, Janice Stephens, Veronica Taylor, Brenda Vance, Betty Varga, Clarann Weinart, Robert Weinland, Wendy Wright

Emeriti:

Marcia L. Dale, Beverly Taheri-Kennedy, Beverly McDermott, Fay W. Whitney, Elizabeth H. Wiest, Norma Wilkerson

The Fay W. Whitney School of Nursing provides a curriculum based on the solid foundation of a general studies program. University students are individuals who come with learning preferences, different experiences, varied goals, and therefore, have unique learning needs. The primary responsibility of faculty is to empower students to become self-directed learners. Active learning is a teaching/learning partnership.

The outcomes of the undergraduate program are to:

1. Synthesize knowledge from liberal arts, sciences, and humanities through the process of critical thinking in the practice of professional nursing.
2. Use health promotion, illness prevention and health protection strategies for individuals, families, groups, and communities.
3. Make effective clinical decisions and evaluate outcomes of care through the application of the nursing process.
4. Participate in interprofessional teams.
5. Provide safe, compassionate, culturally congruent care to diverse groups, including rural populations.
6. Use evidence-based care to guide professional nursing practice.
7. Engage in individual and social advocacy in collaboration with clients.
8. Use technology and information systems effectively to promote optimal professional nursing practice.
9. Lead in the practice and profession of nursing.
10. Demonstrate behaviors that reflect accountability through adherence to the nursing code of ethics, professional and legal standards, and the values of nursing as a caring profession.
11. Engage in self directed professional development.

Graduates receive the Bachelor of Science in Nursing (BSN) degree, and upon successful completion of the licensure examination, are eligible to practice as registered nurses. Completion of the baccalaureate degree is a requirement for admission to graduate study leading to advanced nursing practice.

Graduate Program

The School of Nursing offers a graduate program for advanced practice in rural health nursing. This program includes two options: nurse practitioner (family or psychiatric mental health) and nurse educator. The program has been approved for inclusion as a WICHE regional graduate program. See the *Graduate Bulletin* for further information.

Accreditation and Membership

The baccalaureate and graduate programs are accredited by the Commission on Collegiate Nursing Education.

The Wyoming State Board of Nursing has approved the program. A graduate is qualified to apply for admission to the licensing examination offered by the board.

Bachelor of Science in Nursing (BSN) Program Scholastic Requirements

University and College of Health Sciences policies governing scholastic requirements, including major changes, probation and dismissal, apply to students enrolled in the School of Nursing. In addition to university/college requirements, the School of Nursing has the following scholastic requirements:

1. Grade of at least a C in all required courses.
2. Prerequisites must be met with C or better prior to entering each nursing course.
3. A cumulative G.P.A. of 2.50 based on required courses is the minimum required for admission to the nursing major.
4. Students must attain a 2.00 (C) or S in each nursing course, as well as a cumulative G.P.A. of 2.50 based on required courses to progress.
5. Single prerequisite, requisite, or nursing major course may not be repeated more than once.
6. Total of four prerequisite or requisite courses may be repeated.
7. Total of two nursing courses in the major may be repeated.

Physical Requirements

All nursing students must be able to perform the essential functions of a student nurse. Reasonable accommodations will be afforded to student nurses with disabilities as required under the Americans with Disabilities Act of 1990. Faculty and staff from the School of Nursing will work with staff from the University Disability Support Services office to determine what constitute reasonable accommodations.

Background Checks Requirements

Students enrolled in clinical training programs within the College of Health Sciences are placed in educational and clinical settings where highly vulnerable clients such as minor children, individuals with disabilities, and/or the elderly, are routinely served. These clinical/practice training sites (including schools, hospitals, pharmacies, and other university sites) routinely require criminal background checks for all students who engage in clinical activities. Therefore, background checks shall be required

on all applicants to programs in the College of Health Sciences prior to admission into their prospective program.

Students applying for admission into the nursing major component of our BSN Program will be notified by the School of Nursing of the process for completing the required background check at the time of any admission offer. Previous background checks (e.g. CNA Certification, LPN or RN Licensure) are not acceptable to fulfill this expectation. The results of the background check may determine final admittance to our program.

You may also be required to update your criminal background check each year. Each clinical training site will be informed that you have passed a background check prior to your placement at that site; some sites may require a more current background check. In addition, students seeking readmission into the program are required to complete a new background check. Students are responsible for the costs associated with the admission background check and any other background checks that may be required.

Drug Screening Requirements

Drug screening may be required by some clinical training sites. Students will be notified by the School of Nursing should this be an expectation of them. Students may incur charges for this screening and will be notified of such at that time.

Cost of the Program

University fees, testing fees, and special supplies are paid for by students of nursing. Varieties of clinical facilities in and out of state are used in the practical application of learning. Responsibility for travel arrangements to the clinical areas rests with the student.

Bachelor's of Science in Nursing (BSN) Program

The Fay W. Whitney School of Nursing offers a baccalaureate program with three options to obtain the BSN degree:

1. **Basic BSN** – a basic, entry-level BSN option for the student wishing to become a registered nurse at the baccalaureate level.
2. **Bachelors Reach for Accelerated Nursing Degree (BRAND)** – an accelerated BSN option for the student who has already achieved a previous non-nursing baccalaureate degree and wishes to become a registered nurse at the baccalaureate level.
3. **RN/BSN Completion** – a BSN completion option for the registered nurse who wishes to further their education to the baccalaureate level.

Please refer to the appropriate following section to obtain specific details related to the option you are interested in for obtaining the BSN degree.

RNs with a non-nursing baccalaureate degree – for the student whose ultimate educational goal is to earn a master's degree in nursing, it is not required that a baccalaureate degree in nursing be earned prior to applying for the graduate program. Evidence of additional prerequisite courses is required. All admission requirements to the graduate program must be met prior to acceptance for that program, and there is no guarantee of admission. See the *Graduate Bulletin* for further information.

Basic BSN

This option is an on-campus, basic, entry-level BSN option for students who are interested in becoming a registered nurse.

Second baccalaureate degree seeking students have the option of pursuing the Basic BSN or BRAND (see information under that heading). Students who are planning an associate degree for the RN first should consider the RN/BSN Completion (see information under that heading).

Admission

Students who meet university requirements are admitted to the university. Graduates of fully accredited high schools may declare the pre-nursing component of the Basic BSN (declared NURS major) with a minimum math placement score of 3 or an ACT math score of 23. For students who do not meet these requirements, it is suggested that they major in general undeclared so that they will receive more appropriate advising for their situation through the Center for Advising and Career Services until they meet requirements. As a general undeclared student, they would still be able to work toward becoming a pre-nursing major, but progression through the nursing curriculum will be delayed a minimum of one year until they have achieved eligibility to enroll and succeed in College Algebra, Biology, and Chemistry. Students seeking to transfer into the pre-nursing component must have a minimum nursing grade point average (NGPA) of 2.5 calculated on all prerequisite courses; however, this does not guarantee progression to the nursing major component. Further acceptance into the pre-nursing component of the Basic BSN will also be based on evaluation of their academic work with consideration of the School of Nursing BSN Program Scholastic Requirements.

Students typically apply for admission to the nursing major component in the spring of their sophomore year (spring in which completing their final prerequisite courses). Application to the nursing major component of this option must be received by the Fay W. Whitney School of Nursing no later than February 1 for fall admission (postmarks do not meet the application

deadline). Students applying for admission to the nursing major must be certified as a nursing assistant (CNA). (LPN licensure will also satisfy this requirement). Verification of active certification/licensure is required by application deadline. The number of students admitted to the nursing major is limited. Admission is a competitive process and applicants meeting minimum requirements are not guaranteed admission to the major. Re-entry to this option is dependent upon space availability. The application deadline for spring re-entry is November 1.

Criteria for admission to the nursing major component of the Basic BSN include (refer to nursing website for current criteria as this information is under review; additional criteria to be implemented with incoming students fall 2009. Changes may also affect applicants for fall 2010 application to the nursing major component of Basic BSN):

1. Expectations noted within the BSN Program Scholastic Requirements, Physical Requirements, and Background Checks Requirements will be taken into consideration
2. Completion of specified course prerequisites by the end of the spring semester prior to the fall in which seeking admission.
3. Active CNA Certification (LPN Licensure) (can be from any state).
4. Personal essays (applicants will be asked to address specific questions/topics as part of nursing application).
5. School of Nursing Basic BSN Recommendation Forms with attached letters (to be completed as part of the nursing application packet).

Program of Study

Nursing courses are usually fall and spring semesters of the university academic calendar. One semester of senior residency during spring of the senior year will require students to live in locations away from their home campus.

Curriculum

Minimum requirement to graduate from the School of Nursing with a major in professional nursing is 120 semester hours of credit. Students may have to take additional electives to meet minimum credit requirements.

Evaluation of transfer courses is required for determination of how courses may transfer to UW and be applicable to the nursing curriculum. Some course requirements could vary based on individual academic backgrounds.

In regard to the required courses, PHCY 4450 (Pathophysiology) and PHCY 4470 (Pharmacology), please be advised that these courses must be upper division (3000/4000 level); lower division/Community College level courses do not satisfy this requirement; transfer courses need to be reviewed for acceptability.

Area requirements for admission to the nursing major (JR/SR years) are as follows under the Basic BSN Course Sequence:

Basic BSN Course Sequence

(Active CNA certification required for application/admission to Nursing Major Component; verification required by application deadline.)

Pre-Nursing Component

Prerequisite Courses

(Courses required for admission to the nursing major component.)

	Hrs.
ENGL 1010 (WA).....	3
Approved (WB) course (recommend taking a WB/CH course)	3
MATH 1400 (QA).....	3
STAT 2050 or 2070 (QB)	4
LIFE 1010 (SB)	4
CHEM 1000 or 1020 (SP)	4
KIN 2040 (SB).....	3
KIN 2041 (SB).....	1
KIN/ZOO 3115	4
PHCY 4450	4
MOLB 2240	5
PSYC 1000 (CS)	3
SOC 1000 (CS) or 1100 (CS) or ANTH 1200 (CS/G)	3
FCSC 1140 or 1141.....	2-3
NURS 2340 or EDST 2450.....	3
Total Hrs.	49-50

Required Elective/Graduation Courses

(Additional USP and School of Nursing course requirements needed for graduation. Unless otherwise noted, these requirements may not be met with any of our specified prerequisite, requisite, and/or nursing major component courses. Recommend completing prior to admission, but must be completed by graduation.)

	Hrs.
NURS 1000 (I/L)	1
Approved (CA) course	3
Approved (CH) course (if not met by WB/CH course).....	3
Approved (G) course (if not met by ANTH 1200)	3
COJO 1010 (O)	3
PEAC 1001 (P)	1
Approved (V) course	3
Upper Division Elective (any 3000/4000 level course).....	3
Total Hrs.	13-20

Nursing Major Component (63 credits)

(Nursing application/fee required)

JUNIOR YEAR: Fall	Hrs.
NURS 3040	2
NURS 3047	1
NURS 3150	3
NURS 3440	3
NURS 3475	4
PHCY 4470	4
Total Hrs.	17

JUNIOR YEAR: Spring		Hrs.
NURS	3020 (D).....	3
NURS	3840.....	3
NURS	3842.....	3
NURS	3844.....	3
NURS	3875.....	4
Total Hrs.		16

SENIOR YEAR: Fall		Hrs.
NURS	4150 (L).....	3
NURS	4440.....	4
NURS	4442.....	4
NURS	4475.....	4
Total Hrs.		15

SENIOR YEAR: Spring		Hrs.
NURS	4250 (WC).....	3
NURS	4875.....	12
Total Hrs.		15

Minimum Hours Required for the Degree 120

(Note: Course requirements/expectations are subject to change. Maintain contact with Fay W. Whitney School of Nursing for current expectations.)

BRAND

This option is for students who have already achieved a previous non-nursing baccalaureate degree and who are seeking an accelerated option for obtaining the BSN.

Working with the Outreach School, nursing theory and supporting courses are offered using a combination of online courses; hybrid courses with periodic intensive on-campus experiences; and by the use of the Outreach School's video network. Clinical coursework is arranged at a WY healthcare institution. This option is a 'summer to summer' format with a full time schedule of courses.

Admission

Students must be admitted to the university by the application deadline (*declared NUBR major*). Application to the nursing major component of this option must be received by the Fay W. Whitney School of Nursing no later than December 15 for summer admission. Applications are available online through the nursing web site and are submitted online. The number of students admitted to BRAND is limited and admission is a competitive process. Applicants meeting minimum requirements are not guaranteed admission to this option. Acceptance into BRAND is also based on evaluation of students' academic work with consideration of the School of Nursing BSN Program Scholastic Requirements. Applications will be reviewed following the application deadline and personal interviews will be scheduled for selected qualified applicants. Re-entry to this option is dependent upon space availability.

Criteria for admission to BRAND include:

1. Expectations noted within the BSN Program Scholastic Requirements, Physical Requirements, and Background Checks Requirements will be taken into consideration.
2. Completed baccalaureate degree prior to application to BRAND.
3. Completion of specified course prerequisites by the end of the fall semester prior to the summer in which seeking admission.
4. Active CNA Certification or LPN Licensure (*can be from any state*).
5. Personal essays (*applicants will be asked to address specific questions/topics as part of nursing application*).
6. Three letters of recommendation addressing adult learner capabilities (*form available through nursing web site*).
7. Interview.
8. Wyoming residency will have preference for admission.

Curriculum

Minimum requirement for the second bachelor's (SB) degree candidate to graduate from the School of Nursing with a Bachelor's of Science in Nursing (BSN) is 50 semester hours of credit. This curriculum option totals 58 credit hours.

The minimum requirement for a SB degree is 30 additional semester hours earned from UW, 12 of which must be in upper division level courses. If prior baccalaureate degree was earned through UW, the 30 credit minimum is in addition to the credits earned for previous degree.

Evaluation of transfer courses is required for determination of how courses may transfer to UW and be applicable to the nursing curriculum. Some course requirements could vary based on individual academic backgrounds.

In regard to the required courses, PHCY 4450 (Pathophysiology) and PHCY 4470 (Pharmacology), please be advised that these courses must be upper division (3000/4000 level); lower division/Community College level courses do not satisfy this requirement; transfer courses need to be reviewed for acceptability.

Area requirements for admission to the nursing major are as follows under the BRAND Course Sequence.

BRAND Course Sequence

Pre-Nursing Component

Prerequisite Courses

(Courses required for admission to the nursing major component.)

	Hrs.
STAT 2050 or 2070	4
KIN 2040	3
KIN 2041.....	1
KIN/ZOO 3115	4
MOLB 2240	5
PSYC 1000	3
FCSC 1140 or 1141.....	2-3
Total Hrs. 22-23	

(Students will have completed at minimum a baccalaureate degree therefore the purpose and intent of the University's USP general education requirements will be satisfied. Students lacking college level prerequisites will be advised accordingly.)

Required Elective/Graduation Course

(Recommend completing prior to admission, but must be completed by graduation.)

	Hrs.
Approved US/WY Constitution course.....	3
(Students who have completed an acceptable, transferable US Constitution course will only have to complete the remaining WY Constitution component as required by UW. The WY Constitution component may be satisfied through the 1 credit exam or course.)	
Total Hrs. 3	

Nursing Major Component (58 credits)

(Nursing application/fee required. Courses only offered once a year in sequence.)

SUMMER		Hrs.
NURS	3710	1
NURS	3715	2
NURS	3730	2
NURS	3750.....	3
PHCY	4450	4
Total Hrs.		12

FALL		Hrs.
NURS	3770.....	6
NURS	3771	6
PHCY	4470	4
Total Hrs.		16

SPRING		Hrs.
NURS	4710	3
NURS	4735.....	3
NURS	4736.....	3
NURS	4740.....	6
NURS	4741	3
Total Hrs.		18

SUMMER		Hrs.
NURS	4775.....	10
NURS	4785.....	2
Total Hrs.		12

(Note: Course requirements/expectations are subject to change. Maintain contact with Fay W. Whitney School of Nursing for current expectations.)

RN/BSN Completion

This option is for the associate degree or diploma in nursing level registered nurse or the Wyoming associate degree nursing student who wishes to further their education to the baccalaureate level in nursing. Nursing theory courses are offered online. A clinical course is taken as near to the student's home as possible, depending on the availability of adequate clinical sites. The clinical course is specific to BSN roles. No on campus time required.

Admission

Students who meet university requirements are admitted to the university (*declared NUBS major*) in the pre-nursing component of the RN/BSN Completion. Students are designated as pre-nursing until they have completed the RN/BSN application process and are formally admitted into the School of Nursing. Acceptance into the RN/BSN Completion is also based on evaluation of students' academic work with consideration of the School of Nursing BSN Program Scholastic Requirements.

The opportunity exists for students who are currently enrolled in a Wyoming associate degree nursing program to pursue dual admission to RN/BSN Completion. In addition to a streamlined RN/BSN admission process, onsite mentoring and advising sessions are available.

Application to the nursing major component of this option must be received by the Fay W. Whitney School of Nursing no later than June 1 for fall admission, October 1 for spring admission, or February 1 for summer admission. Applications are available online through the nursing web site and are submitted online. Students applying for admission to the nursing major component must have an active unencumbered RN license in the state in which planning to complete clinical course work (*current documentation must be on file with the School of Nursing throughout participation in the RN/BSN Completion*). Verification of active unencumbered RN licensure is required by application deadline. The number of students admitted to RN/BSN Completion may be limited based on School of Nursing resources. Applicants meeting minimum requirements are not guaranteed admission to the major. Re-entry to this option is dependent upon space availability.

Criteria for admission to the nursing major component of the RN/BSN Completion include:

1. Expectations noted within the BSN Program Scholastic Requirements, Physical Requirements, and Background Checks Requirements will be taken into consideration.
2. Official transcripts are required from all other colleges/universities attended to be on file with the University of Wyoming.

- Official transcripts indicating an associate degree or diploma in nursing from an accredited school.
- Wyoming associate degree nursing students must provide evidence of completion of the first semester of a Wyoming associate degree nursing program with a cumulative G.P.A. of at least 2.50 in the Wyoming associate degree nursing program. A final transcript will be required once the associate degree in nursing has been conferred.

3. Students must have a C or better in all required courses and a minimum nursing grade point average (NGPA) of 2.5 calculated on all completed requisite courses at time of formal admission.
4. Active unencumbered RN Licensure for students who have completed an associate degree or diploma in nursing program. Students currently enrolled in a Wyoming associate degree nursing program are required to obtain unencumbered RN licensure upon completion of that program and submit verification of RN licensure upon receipt prior to taking any of the senior (4000) level nursing courses.

Curriculum

Minimum requirement to graduate from the School of Nursing with a major in professional nursing is 120 semester hours of credit. Additional elective courses are required to complete the degree and can be taken anytime before graduation. It is important for students to be aware of course prerequisites for individual nursing courses and to be in regular contact with a nursing adviser.

Evaluation of transfer courses is required for determination of how courses may transfer to UW and be applicable to the nursing curriculum. Some course requirements could vary based on individual academic backgrounds.

In regard to the required courses, PHCY 4450 (Pathophysiology) and PHCY 4470 (Pharmacology), please be advised that these courses must be upper division (3000/4000 level); lower division/Community College level courses do not satisfy this requirement; transfer courses need to be reviewed for acceptability.

Area requirements for admission to the nursing major are as follows under the RN/BSN Completion Course Sequence.

RN/BSN Completion Course Sequence

(Documentation of a current active unencumbered RN license must be on file with the School of Nursing throughout participation in the program)

Pre-Nursing Component

Prerequisite Courses

(Students are encouraged to complete these courses before taking courses in the nursing major component.)

	Hrs.
Approved (WA) course.....	3
Approved (WB) course.....	3
Approved (QA) course.....	3
STAT 2050 or 2070 (QB).....	4
PSYC 1000 (CS).....	3
ANTH 1200 (CS/G) or SOC 1000 (CS) or 1100 (CS)	3
KIN 2040 (SB)	3
KIN 2041 (SB)	1
KIN/ZOO 3115	4
MOLB 2021.....	4
PHCY 4450 (Online UW).....	4
PHYC 4470 (Online UW).....	4
NURS 3010.....	3
Total Hrs.	42

Required Elective/Graduation Courses

(Additional USP and School of Nursing course requirements needed for graduation. Unless otherwise noted, these requirements may not be met with any of our specified requisite and/or nursing major component courses.)

	Hrs.
Approved (CA) course.....	3
Approved (CH) course.....	3
Approved (G) course (if not met by ANTH 1200).....	3
COJO 1010 (O).....	3
Approved (S, SB, SP, SE) course.....	3-4
Approved (V) course.....	3
Upper Division Elective (any 3000/4000 level course).....	3
Total Hrs.	18-22

Nursing Major Component (22 credits)

(Students must be formally admitted to the nursing major component to take these courses.)

	Hrs.
NURS 3020	3
(D-effective S2005 forward)	
NURS 3040	2
NURS 3630	4
(P-effective F2005 forward)	
NURS 4150.....	3
(L-effective S2005 forward)	
NURS 4240 or NURS 4440	3-4
NURS 4250 (WC).....	3
NURS 4875	4
Total Hrs.	22-23

Courses within the nursing major component of the RN/BSN curriculum are being reviewed. Anticipated changes will be made during 2009. For questions/updates, contact rn.bsn@uwyo.edu.

Escrow Courses

(Credits are automatically posted to the student's UW transcript upon completion of NURS 3630, documentation of RN licensure and transcript verifying graduation from an associate degree or diploma nursing program. These credits represent credit for nursing content learned in the associate degree or diploma in nursing program.)

	Hrs.
NURS 3440	3
NURS 3475	4
NURS 3840	3
NURS 3842	3
NURS 3844	3
NURS 3875	4
NURS 4442	4
Total Hrs.	24

Minimum Hours Required for the Degree

120

(Residency Requirement: A minimum of 30 upper-division hours must be completed through UW.)

(Note: Course requirements/expectations are subject to change. Maintain contact with Fay W. Whitney School of Nursing for current expectations.)

Nursing (NURS)

Courses listed below, with the exception of NURS 2110, 2135, 2240, 2340, 3250, 4155, 4175, 4350, 4960, and 4980 are open only to students formally admitted into the nursing major component of the BSN Program as required of their specific option. NURS 1000 is open to students who are majoring in nursing. Effective with the 2009-2010 academic year the following courses will no longer be offered due to curriculum changes in the BSN Program: NURS 3430, 3470, 3670, 4130, 4170, and 4240.

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2♦QB]).

1000. Introduction to the Intellectual Community in Nursing. 1. [F1♦I, L] Introduces first-year students to the intellectual expectations of the university, promotes successful transition to higher education, and explores issues in professional nursing. Designed to introduce and reaffirm skills for academic success including critical thinking, information literacy, and the concept of "life-long learner" within the context of professional nursing. (Normally offered fall semester)

2110. Fundamentals of Aging and Human Development. 3. [C2♦(none)] Discusses aging as lifelong process, involving interrelationships of the individual and his or her environment. Includes future demographic trends, family health care, social policy and mass media. Cross listed with FCSC 2110. (Normally offered fall semester)

2135. Women and Aging. 3. [C2♦(none)] Focuses on women and the aging process with emphasis given to both the problems and promises of aging. Topics to be explored within a multicultural, sociological framework include the definition of self, relationships, community, health and health care, work and service, retirement, economic realities and new perspectives on aging. Cross listed with WMST 2135. *Prerequisites:* ENGL/SOC/WMST 1080 or SOC 1000 or FCSC/NURS 2110 or SOC 2120.

2240. Medical Terminology. 3. Introduces medical terminology. Includes word structure of medical-surgical terms, body parts and organs, body systems and commonly used medical abbreviations.

2340. Developmental Influences on Health. 3. [C2♦(none)] Explores interaction between development and health. Discusses human development of physiological, psychological, cognitive, sociocultural, and spritual dimensions across the lifespan. Identifies selected theories associated development over the lifespan and implications for health care. Provides foundation for more in-depth consideration of developmental factors related to health maintenance and human potential.

3010. Introduction to Higher Education in Nursing. 3. Expands the nurses understanding of the nursing profession by enhancing critical thinking skills and reinforcing the importance of life-long learning. Focus is on information literacy, theory and research, legal/ethical practice, and written and on-line communication. *Prerequisites:* current RN license or concurrent enrollment in WY ADN education program. (Normally offered fall semester)

3020. Cultural Diversity in Family Health Care. 3. [(none)♦D] Concepts of cultural heritage, history, diversity, health, illness, and family theories are applied to nursing assessment and care of the family as client. Contemporary issues of immigration and poverty, the effect of culture, social class, religion/spirituality, family form, family development stage and situational factors on family as client are studied. *Prerequisites:* Admission into the nursing major component of the program; RN/BSN: NURS 3010 or concurrent enrollment. (Normally offered spring semester)

3040. Health Assessment of Individuals Across the Life Span. 2. Assesses physiological, psychological, socio-cultural and developmental variables of individual client system across the lifespan. Normal variations and potential problems of human health experiences

are identified using critical thinking. History taking and documentation of analytic finds are developed. *Prerequisite:* admission into the nursing major component of the program; RN/BSN: NURS 3010 or concurrent enrollment. (Normally offered fall semester)

3047. Health Assessment Lab. 1. Develops assessment skills of physical, psychological, sociocultural, spiritual, and developmental dimensions of the human health experience. Normal variations and potential problems of human health experiences are identified using critical thinking. History taking and documentation skills are developed. Offered S/U only. *Prerequisite:* NURS 3040 or concurrent enrollment.

3150. Professional Roles: Carer/Helper, Counselor and Advocate. 3. Introduces students to core concepts and processes related to professional nursing practice with a special focus on the roles of carer/helper, counselor, and advocate. Mutuality of the nurse-client relationship, therapeutic communication, and social advocacy are applied to the human health experience. *Prerequisite:* admission into the nursing major component of the program.

3250. Health Psychology. 3. Provides overview of growing partnership between psychology and health care, including history of psychology in health care; theoretical foundations of health and illness; intervention and research techniques; stress and high risk behaviors (e.g., substance abuse, eating behaviors, AIDS); psychology's contribution to improving outcomes and quality of life in chronic and life-threatening behaviors. Cross listed with PSYC 3250. *Prerequisite:* PSYC 1000 or consent of instructor.

3430. Nursing Therapeutics: Acute Care I. 3. Use of nursing process in nursing care to clients across the life span experiencing acute alterations in human experience. Focus is on physiological, psychological, spiritual, developmental, and sociocultural dimensions. Process skills of critical thinking, communication, teaching, collaboration, change strategies, and self-development and professional role of care giver/helper, counselor, and advocate are integrated. *Prerequisites:* admission to the nursing major component of the program; NURS 3040, 3047, 3150, PHCY 4470 or concurrent enrollment.

3440. Adult Health I. 3. Students consider the physiological, psychological, spiritual, developmental and socio-cultural dimensions of adult clients during wellness and illness. Focus is on cardio-pulmonary, genitourinary, integumentary and endocrine systems. Other topics include genetics, drug therapy, safety, and infection control. Students will incorporate the professional nursing role into planning care. *Prerequisites:* admission into the nursing major component of the program; NURS 3040, 3047, 3150, PHCY 4470 or concurrent enrollment.

3470. Nursing Practicum: Acute Care. 4. Application of nursing process in variety of settings with clients across the life span experiencing acute alterations. Focus on the physiological, psychological, spiritual, developmental and sociocultural dimensions. Process skills of critical thinking, communication, teaching, collaboration, change strategies, and self-development and professional role of carer/helper, counselor, and advocate are integrated. Offered S/U only. *Prerequisite:* NURS 3430 or concurrent enrollment.

3475. Nursing Practicum: Adult Health I. 4. Students provide basic nursing care using the nursing process in a clinical setting with adult clients experiencing alterations in health status. The focus is on the physiological, psychological, spiritual, developmental and sociocultural dimensions of the client. The students will identify the roles of the professional nurse. *Prerequisites:* NURS 3440 or concurrent enrollment.

3630. Health Promotion. 4. [(none)◀▶P] Integrating nurse roles, prepares students to use the nursing process to promote or protect the health of clients across the lifespan. Focus is on the physiological, psychological, spiritual, developmental, and socio-cultural dimensions of clients or client groups. *Prerequisites:* admission into the nursing major component of the program; NURS 3010, 3020, and 3040 or concurrent enrollment.

3670. Nursing Practicum: Health Promotion. 4. Applies nursing process to promote or protect health across the lifespan. Focus is on physiological, psychological, spiritual, developmental, and sociocultural dimensions. Process skills of critical thinking, communication, teaching, collaboration, change strategies, and self-development, and the professional role of carer/helper, counselor, and advocate are integrated. *Prerequisites:* NURS 3630 or concurrent enrollment.

3710. Nursing Fundamentals. 1. Focuses on providing the student with concepts and demonstrations of basic care and comfort; technical skills; use of equipment; asepsis and infection control; medication administration; nurse and client safety; client rights and dignity. *Prerequisites:* previous bachelor's degree; admission to the BRAND track; concurrent enrollment in NURS 3715.

3715. Foundational Laboratory. 2. Using system analysis, students assess all dimensions of individual clients across life span. Concepts and demonstration of basic care/comfort; technical skills; use of equipment; asepsis/infection control; medication administration; nurse/client safety; client rights and dignity. Allows the student to gain confidence and competency in performing motor skills; critical thinking; communication; self-development. *Prerequisites:* Previous Bachelor's degree; admission to BRAND; concurrent enrollment in NURS 3710; NURS 3750.

3730. Introduction to Professional Nursing. 2. Introduces students to the core concepts of professional nursing practice. Nursing process, domains of nursing practice, health policy, evidence-based practice, legal and professional standards will be assimilated into nursing practice from discussion, role playing and case studies. Contemporary nursing issues and situational factors will be examined. *Prerequisites:* Previous Bachelor's degree; admitted to the BRAND nursing track.

3750. Health Assessment and Promotion. 3. Using system analysis, students assess the physiological, psychological, spiritual, socio-cultural, developmental variables of individual clients across the life span. Nursing process and evidence-based nursing practice are used to promote/protect health of clients through health promotion, risk reduction, disease prevention of the client/client systems. Process skills and professional roles are integrated. *Prerequisites:* Previous bachelor's degree; admitted to BRAND nursing track; concurrent enrollment in NURS 3715.

3770. Nursing Care in Acute and Chronic Illness. 6. Use of the nursing process and evidence-based nursing practice with adults experiencing acute and chronic physical and psychiatric health alterations; progressing to the provision of nursing care for clients experiencing complex acute and chronic alterations. Focus is on physiological, psychological, spiritual, developmental and socio-cultural dimensions of adult clients. *Prerequisites:* admission to the Accelerated track; NURS 3750; 3730; 3710; 3715; PHCY 4470 or concurrent enrollment.

3771. Nursing Care in Acute and Chronic Illness Practicum. 6. Application of nursing process and evidence-based nursing practice with adults experiencing acute and chronic physical health alterations; progressing to the provision of nursing care for clients experiencing complex acute and chronic alterations. Focus is on physiological, spiritual, developmental and socio-cultural dimensions of adult clients. Offered satisfactory/unsatisfactory only. *Prerequisites:* Concurrent enrollment in NURS 3770.

3840. Adult Health II. 3. Junior students integrate the physiological, psychological, spiritual, developmental and socio-cultural dimensions of adults as they study nursing care during wellness and illness. Focus is on the neurological, gastrointestinal, musculoskeletal systems and genetics, diagnostics and pre-operative care. Students learn the professional nursing role in planning care of the adult client. *Prerequisites:* NURS 3440 and 3475; NURS 3020 or concurrent enrollment.

3842. Care of the Older Adult. 3. Explores the physiological, psychological, spiritual, developmental and socio-cultural dimensions of the older adult and addresses the 30 AACN/Hartford Foundations' Recommended Baccalaureate Competencies and Curricular Guidelines for Geriatric Nursing Care. *Prerequisites:* NURS 3440 and 3475; NURS 3020 or concurrent enrollment.

3844. Mental Health and Illness. 3. Explores psychiatric illnesses and mental health concepts consistent with the roles of the professional nurse. Emphasis is on the nursing process, DSM-IV criteria, therapeutic communication, treatment modalities, legal and ethical concerns, community resources, and inter-related client needs in a variety of health care settings. *Prerequisites:* NURS 3440 and 3475; NURS 3020 or concurrent enrollment.

3875. Nursing Practicum: Adult Health II. 4. Junior nursing students are placed in clinical settings to provide patient-centered nursing care using the nursing process. The focus is on adult clients experiencing acute, chronic and/or psychiatric alterations in health. The physiological, psychological, spiritual, developmental and socio-cultural client dimensions are studied and professional nursing roles are integrated into practice. *Prerequisites:* NURS 3840, 3842, 3844 or concurrent enrollment.

3970. Nursing Externship. 3. Allows students to obtain college credit for nursing experience gained in an approved setting. Increases application of nursing theory, knowledge of a health care agency, interpersonal working relationships, technical skills and organization of time in providing nursing care. Offered S/U only. *Prerequisites:* NURS 3630 and 4130; either NURS 3670 or 4170. (Offered once a year in summer)

4130. Nursing Therapeutics: Chronicity/Rehabilitation. 4. Use of nursing process with clients across the lifespan experiencing chronic/rehabilitation needs. Focus on physiological, psychological, spiritual, developmental, and sociocultural dimensions. Process skills of critical thinking, communication, teaching, collaboration, change strategies, and self-development and the professional role of carer/helper, counselor, and advocate are integrated. *Prerequisites:* NURS 3430 and 3470; NURS 3020 or concurrent enrollment.

4150. Professional Roles: Researcher. 3. [M3◀▶L] The development of the role of the nurse as a consumer of research. In this role, the student applies scientific methods and health information literacy skills to make critical judgments about improving practice and modifying nursing care. *Prerequisites:* STAT 2050 or 2070 or equivalent; Admission into the nursing major component of the program; RN/BSN: NURS 3630 or concurrent enrollment, current RN license. (Normally offered fall semester)

4155 [4920, 4950]. Women, War and Health. 3. [C2, G1↔CS, G] Focuses on the physical and psychological health of women and children as influenced by armed conflict. Examines the psychosocial, public health, and socioeconomic effects of living in contemporary war zones or conditions of threatened war. Key international documents that address effects upon women and children are discussed in order to evaluate feminist initiatives to prevent and mediate the consequences of war. Cross listed with INST/WMST 4155. (Offered every other year)

4170. Nursing Practicum: Chronicity/Rehabilitation. 4. Apply nursing process with clients experiencing chronic/rehabilitation needs. Focus on physiological, psychological, spiritual, developmental, and sociocultural dimensions. Process skills of critical thinking, communication, teaching, collaboration, change strategies, and self-development, and professional role of carer/helper, counselor, and advocate are integrated. *Prerequisites:* NURS 4130 or concurrent enrollment.

4175 [4940]. Gender, Women, and Health. 3. [G1, C2↔CS, G] Focuses on issues of gender, women and health, including the effects of gender bias in medical research and health care practices and policies. Health care issues of specific concern to women, both nationally and internationally will be examined. Dual listed with NURS 5175. Cross listed with INST/WMST 4175. *Prerequisite:* upper-division standing, lower division social or psychological science course. (Offered every other year) **4240. Community Health. 3.** Collaborate with health care teams in empowering groups, aggregates and communities. Content includes epidemiology, community assessment and planning, organization and delivery of health care services, and health care policy. *Prerequisite:* admission into the nursing major component of the program; NURS 3630 or concurrent enrollment, current RN license.

4250. Professional Roles: Leader. 3. [W3↔WC] The role of leader in nursing practice is developed through the integration of leadership, management, and organizational theories. Emphasis is placed on the nurse as health care provider and manager of care facilitating planned change in clients and/or environments. *Prerequisites:* USP WA and WB; admission into the nursing major component of the program; RN/BSN: NURS 3630 or concurrent enrollment, current RN license.

4350. Health Management Issues in Early Education. 3. Provides the student the opportunity to examine the implications of a child's health status on his/her personal, educational, social and cognitive development. Provides personnel working closely with the young child with disabilities and his/her family an understanding of the issues related to health concerns and a framework for intervention planning. Special emphasis is placed on concerns specific to the child in a day

care, preschool or other school setting. Cross listed with EDEC/FCSC 4350. *Prerequisites:* junior standing and consent of instructor.

4435. Nursing Therapeutics: Acute Care II. 3. Continues to use the nursing process for provision of nursing care to clients across the life span experiencing complex acute alterations in the human experience. The focus continues to be on the dimensions of the client; process skills and professional roles of carer/helper, counselor, and advocate; consumer of research; and leadership. *Prerequisites:* NURS 3630 and 4130; either NURS 3670 or 4170 or concurrent enrollment.

4440. Public Health Nursing. 4. Introduces the student to population-focused nursing and applies the nursing process to the community as client. Addresses core functions and essential services of public health. Focuses on epidemiology, community assessment, community planning and implementation, analysis of the health care system, emergency preparedness, and legal aspects of public health. *Prerequisites:* NURS 3875; NURS 4150 or concurrent enrollment.

4442. Nursing Care of Children and Families. 4. Theory course which encompasses the care of children and childbearing families including the physiological, psychological, spiritual, developmental and socio-cultural dimensions. The focus of this class is on obstetrical and pediatric nursing care. Integrates wellness and illness issues in all aspects of family care. *Prerequisites:* NURS 3875; NURS 4150 or Concurrent enrollment.

4475. Nursing Practicum: Family and Public Health. 4. In this senior clinical practicum, students apply the nursing process to childbearing families, children and communities. The focus is on the physiological, psychological, spiritual, developmental and socio-cultural dimensions of individuals, families and populations. Students will incorporate professional nursing roles into population centered care. *Prerequisites:* NURS 4440, 4442 or concurrent enrollment.

4710. Nursing Care of the Aging Family. 3. Utilizes nursing process to assess, promote, and protect health of aging families. Focus is on physiological, psychological, spiritual, developmental, socio-cultural dimensions of the geriatric adult, including family dynamics. Evidence-based practice guides illness and disease management; disease prevention. Expected, unexpected responses to therapies; grief, loss, end of life concepts will be incorporated. *Prerequisites:* senior standing; consent of instructor.

4735. Nursing Care of Vulnerable Populations. 3. Synthesizes past learning to develop increasingly independent nursing practice with at risk populations in community settings. Focuses not only on groups/aggregates but also on vulnerability conveyed by such factors as psychiatric illness. Core public health functions of community assessment, essential health services, disaster preparedness, health policy development/global

health care emphasized. *Prerequisites:* NURS 4740; NURS 4741; concurrent enrollment in NURS 4736.

4736. Community Nursing Care of Vulnerable Populations Practicum. 3. Application of the nursing process in caring for vulnerable populations in the community. Apply the core public health functions of community assessment, assurance of essential health services, and health policy development. Emphasis is on using demographic and epidemiological data to plan population-based nursing interventions. *Prerequisites:* NURS 4740; NURS 4741 and concurrent enrollment in NURS 4735.

4740. Nursing Care of the Young Family. 6. Utilizes nursing process to assess, promote, and protect the health of young families as client. Focus is human sexuality and reproduction, family planning, pregnancy stages, neonatal, pediatrics. Growth and development, health promotion, disease prevention, family dynamics are included. Evidence-based nursing guides practice to promote a healthy family and family system. *Prerequisites:* NURS 3770; 3771, and concurrent enrollment in NURS 4741.

4741. Nursing Care of the Young Family Practicum. 3. Applies and synthesizes nursing process to assess, promote, and protect the health of young families as clients. Focus is human sexuality and reproduction, family planning, pregnancy stages, neonatal, pediatrics. Growth and development, health promotion, disease prevention, family dynamics are included. Evidence-based nursing guides practice to promote a health family/family system. Offered S/U only. *Prerequisites:* NURS 3770; NURS 3771; and concurrent enrollment in NURS 4740.

4750. Independent Study in Nursing. 1-4 (Max. 6). Provides students with opportunity to investigate a problem in nursing care not considered in required nursing courses or to explore in more depth an area considered in one of required nursing courses. Area of study and requirements for earning credit are determined in consultation with nursing faculty member. *Prerequisite:* senior standing in nursing or consent of instructor. Offered S/U only. (Normally offered fall, spring and summer)

4775. Professional Residency. 10. Provides opportunities to utilize and synthesize core concepts of professional nursing. Intensive clinical experience allowing students to become socialized into health care delivery system; gain in autonomy/confidence in performing skills; practice critical thinking in making ethical clinical decisions; develop leadership providing and coordinating evidence-based nursing care. Offered S/U only. *Prerequisites:* NURS 4710; NURS 4735; NURS 4736; and concurrent enrollment in NURS 4785.

4785. Nursing Integration. 2. Focuses on the continuing integration of previously learned concepts. The student further develops the role of consumer of research and incorporates leadership and management skills as a member of the profession. *Prerequisites:* NURS 4735; NURS 4736; NURS 4710; and concurrent enrollment in NURS 4775.

4790. Special Topics in Nursing. 1-3 (Max. 8). Provides offerings in selected nursing topics on concepts, theories or practices as related to specified areas in nursing. *Prerequisites:* junior standing in nursing and consent of instructor.

4875. Senior Residency. 4-12 (Max 12). A capstone clinical course to utilize and synthesize basic concepts of professional nursing. Socializes students into a health-care delivery system. Learning experiences allow students to gain confidence; practice critical thinking, leadership and ethical decision making in clinical situations. Individual needs and preferences are taken into consideration with student placements. Offered S/U only. *Prerequisites:* All required courses in the nursing major component; BSN: NURS 4250 or concurrent enrollment; enrollment during final semester. RN/BSN: NURS 4150, 4240, 4250 or concurrent enrollment. (Normally offered spring semester)

4960. Women's Bodies, Women's Minds. 3. [C2↔CS] Explores women's physiologic and psychologic development and the influences of patriarchal society upon the interpretation of what constitutes normalcy across the female life cycle. Analyzes historical, cultural and contemporary attitudes of the health care system and women's perspectives on menstruation, childbearing, breast-feeding and menopause. Cross listed with WMST 4960. (Normally offered spring semester)

4980. Nursing Ethics. 3. Acquaints the undergraduate or graduate nursing student with basic bioethical theory and issues that arise throughout the human lifespan. Includes use of community and professional resources to facilitate decision making where bioethical issues are encountered in nursing practice. *Prerequisites:* senior nursing student or RN; e-mail access with beginning computer skills; library research skills.

School of Pharmacy

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Web site: www.uwyo.edu/Pharmacy

Dean: John H. Vandel

Associate Dean of Operations and Academics: Linda G. Martin

Associate Dean of Student Affairs: M.

Glaucia Teixeira

Associate Dean of Pharmacy Practice:

Robert D. Scalley

Associate Dean of Pharmaceutical

Science: Bruce W. Culver

Professors:

BRUCE W. CULVER, B.S. University of Wyoming 1969; Ph.D. University of Kansas Medical Center 1975; Professor of Pharmacy 2004, 1986, 1977.

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Associate Professors:

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W. MIKE ZAWADA, B.A. Hendrix College 1987; Ph.D. University of Arkansas for Medical Sciences 1993; Associate Professor of Toxicology 2008.

Assistant Professors:

SUZANNE CLARK, B.S. University of Iowa 1977; B.S. University of Wyoming 1981; Ph.D. Duke University 1996; Assistant Professor of Pharmacology 2007.

CAROL HERMANSON KOBULNICKY, B.S. University of Wisconsin 1992; M.S. 1998; Ph.D. 2002; Assistant Professor of Social/Administrative Pharmacy 2002.

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Clinical Assistant Professors

WHITNEY BUCKLEY, Pharm.D. University of Wyoming 2004; Clinical Assistant Professor of Pharmacy Practice 2008.

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MICHELLE L. HILAIRE, Pharm.D. Duquesne University 2002; Clinical Assistant Professor of Pharmacy Practice 2004.

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CHRISTY M. WEILAND, B.A. Sonoma State University 2003; Pharm.D. University of Washington 2007; Clinical Assistant Professor of Pharmacy Practice 2008.

TONJA M. WOODS, Pharm.D. University of Wyoming 2002; Clinical Assistant Professor of Pharmacy Practice 2003.

Drug Information Director:

Dr. Melissa Hunter

Professors Emeriti:

H. John Baldwin, Ph.D.

Emery Brunett, Ph.D.

Kenneth F. Nelson, Ph.D.

Robert B. Nelson, Ph.D.

Mission Statement

The mission of the University of Wyoming School of Pharmacy is to be recognized as a leader in pharmacy education by:

- Providing and sustaining knowledge, skills, attitudes, behaviors and values necessary to develop outstanding pharmacists capable of delivering patient-centered care in a rural-frontier environment.
- Promoting professional development through a commitment to life-long learning
- Achieving recognition for innovation or leadership in teaching, service, research and practice
- Promoting excellence in the practice of pharmacy by being agents of positive change.
- Providing service to health care providers, health care systems and patients to promote excellence in health care.

Statement of Values

The School of Pharmacy values professionalism in all of its various guises.

Objectives

The primary objective of the School of Pharmacy is to provide a sound scientific, professional and cultural background necessary for the successful provision of patient-oriented primary pharmaceutical care with emphasis on rural interdisciplinary community-based practice.

Learning Outcomes

The University of Wyoming adheres to the American Association of Colleges of Pharmacy Center for Advancement of Pharmaceutical Education (CAPE) educational outcomes 2004. This multipage document (and its supplements) can be accessed at www.aacp.org.

Student/Faculty Relations

The faculty and staff at the School of Pharmacy treat students as adults and expect appropriate behavior as beginning professionals. The school of Pharmacy recognizes that the profession of pharmacy demands of its members the utmost degree of professional competence, ethical behavior, and integrity. Upon enrolling at the University of Wyoming SOP and at the start of each academic year, all students will sign a pledge acknowledging that they have received and read the current Honor Code and that they have made a personal commitment to uphold the code and abide by its principles. Similarly, the School of Pharmacy Code of Professional Expectations for faculty and staff is built on the foundation of respect for others, personal responsibility, the cre-

ation and maintenance of trust, and honesty and truthfulness. The administration, faculty, staff, students, and alumni of the School of Pharmacy at the University of Wyoming should strive to set an example of ethical leadership and professional behavior as those traits are essential for good social and business interactions.

Accreditation and Membership

In Wyoming, as in most other states, one requirement for examination and registration as a pharmacist is graduation from an accredited entry-level professional program at a school or college of pharmacy. The Accreditation Council for Pharmacy Education (ACPE), the national accrediting agency for pharmacy, accredits pharmacy degree programs.

The Doctor of Pharmacy program at UW was implemented beginning fall 1996 and was accorded full accreditation status in 2007 following an on-site evaluation by the ACPE in September 2006. Verification of current accreditation status may be made by: a) contacting the Dean's Office, School of Pharmacy; b) connecting to www.uwyo.edu/pharmacy/; c) contacting the Accreditation Council for Pharmacy Education (20 North Clark Street Suite 2500, Chicago IL 60602-5109; (312) 664-3575; csinfo@acpe-accredit.org) or d) by checking the latest Annual Directory of Accredited Professional Programs published by ACPE.

The school is a member of the American Association of Colleges of Pharmacy and adheres to its educational standards.

Preprofessional Program Preprofessional Requirements

Applicants for the professional program in pharmacy must complete preprofessional requirements before they can be admitted. Usually, a minimum of four semesters (two academic years totaling 67 credit hours) is required to complete preprofessional requirements.

All preprofessional coursework must be completed by the end of the spring semester prior to matriculation in the professional program. Summer work will not be accepted.

Graduates of fully accredited high schools may be admitted to the preprofessional program with a math placement score of 3 or an ACT math score of 23. Students transferring into the professional program must have a GPA of 3.0.

For students who do not meet these requirements, it is suggested that they major in Health Sciences undeclared for their first year until they meet the math requirement.

Preprofessional Program (PPCY)

Required Curriculum

Suggested Course Sequence

FIRST YEAR: Fall		Hrs.
CHEM	1020	4
ENGL	1010	3
LIFE	1010	4
Electives		4
USP Physical Activity and Health		1
UNST I Course		1
Total Hrs.		17

FIRST YEAR: Spring		Hrs.
CHEM	1030	4
LIFE	2022	4
MATH	2200	4
POLS	1000	3
Electives		3
Total Hrs.		18

SECOND YEAR: Fall		Hrs.
ENGL	2020 or 2030 or USP Writing requirement	3
CHEM	2420	4
STAT	2050	4
KIN/ZOO	2040	3
KIN/ZOO	2041	1
Total Hrs.		15

SECOND YEAR: Spring		Hrs.
MOLB	2240	5
CHEM	2440	4
ZOO3115	4	4
Electives		4
Total Hrs.		17

Electives

Students entering the university in the preprofessional program must fulfill University Studies Program (USP) requirements. USP electives may be used for a maximum of two categories. The School of Pharmacy is committed to ensuring graduates are truly educated individuals with a broad general education as well as professional knowledge and skills. This general education component is achieved by completion of the University Studies Program requirement. Each student, both professional and preprofessional, is assigned an adviser to assist him or her in making appropriate academic choices.

Professional Doctoral Program Admission

Admission to the professional program leading to the entry-level Pharm. D. degree is limited to 52 students per year and is highly competitive. Admission is granted by the School of Pharmacy Associate Dean of Student Affairs upon the advice of the School of Pharmacy Student Affairs Committee. Students applying to the UW School of Pharmacy must use the PharmCAS application (www.pharmcas.org) process, all materials (PCAT scores, and Letters of Recommendation) are submit to UW using this service. The School of Pharmacy requires no supplemental application. Students granted admission to the professional program will have to pay a one-time, non-refundable, seat fee to guarantee their placement into

the entering class. As part of a College of Health Sciences requirement students are also expected to complete and pass a background check prior to final admission to the professional program.

Program of Study Requirements for Graduation

The degree of Doctor of Pharmacy (Pharm.D.) is granted upon satisfactory completion of the professional curriculum in accordance to the school's academic standards and the fulfillment of the general university requirements. Transfer students who have previous professional pharmacy credits accepted as partial completion of residence work may not earn a degree from this university for less than 30 semester hours of resident credit in the professional program of this School of Pharmacy over a minimum of two resident semesters.

Graduation with Honors

The University of Wyoming School of Pharmacy is authorized to grant honors for academic excellence. A Doctor of Pharmacy with honors designation is awarded by the University of Wyoming to students who graduate with exceptional scholarship in Pharmacy.

Exceptional scholarship in pharmacy is defined as completion of a minimum of 142 hours from the University of Wyoming School of Pharmacy and graduation in the top 5% of the class based on their pharmacy GPA. The Pharmacy GPA is calculated on the basis of required professional pharmacy curriculum coursework and excludes required or selected elective hours. The honors distinction must be approved by a School of Pharmacy faculty vote.

Academic Honesty and Professional Conduct

Students admitted to the professional program are required to participate and sign the University Of Wyoming School Of Pharmacy Honor Code. Failure to sign the honor code will result in a withdrawal of admission offer or termination from the professional program.

Academic Standards for Progression and Graduation

The course of study in the School of Pharmacy (hereafter, SOP) is four academic years leading to a Doctor of Pharmacy degree (PharmD). The coursework is organized in a prescribed, non-negotiable, sequential manner, which provides for an excellent general and professional background. The correct sequence and timing of the professional courses in the curriculum must be maintained throughout the entire program. Students usually enter the professional program (hereafter, Program) with a P1 designation (first-year pharmacy student) and are not allowed to register for P2, P3 or P4 coursework until all

professional required courses pertaining to the P1 year have been satisfied with passing grades (C or better) and achievement of at least the minimum GPA (see academic standards). Normally, while in the Program, pharmacy core courses from other professional pharmacy programs will not be applied to the UW degree. Courses taken as S/U, including electives, are usually considered unacceptable in fulfilling Program requirements, with the exception of PHCY 6485, Reflective Learning in Pharmacy.

Academic Standards

1. All University and SOP policies governing academic and professional requirements, including probation and dismissal, apply to students enrolled in the SOP Program.
2. Any violation of the academic standards herein described may constitute grounds for probation or dismissal from the Program. A violation may also lead to student inability to be placed in fourth year professional courses.
3. All academic requirements in the Program must be completed in a maximum of 6 years. This time period incorporates the 4 years of coursework and professional experiences required of all students, and takes into account any leave of absence approved by the school (in accordance with the SOP Leave of Absence Policy document). Students shall be terminated from the program if graduation is not achieved at the end of the 6th year from their official admission date to the professional program.
4. A grade of D or lower, or course withdrawal, in any required course of the professional program constitutes failure to progress toward the PharmD degree and results in probation (inability to progress to the next year).
5. A grade of D or lower, or course withdrawal, in any elective coursework will not fulfill elective requirements and the number of credits must be replaced prior to reaching the fourth year in the Program. Students need to understand that while failure in elective courses will not stop progression or cause student termination from the program, it will count toward the minimum GPA of 2.0, which may be grounds for stopping progression and/or termination.
6. No professional program courses can be repeated more than once. Inability to earn a grade of C or better in the same course will lead to student termination from the Program.

7. A maximum of three core courses may be permitted to be repeated during the degree program. This standard is however contingent on maintenance of acceptable GPA for progression.
8. Inability to successfully complete a core course in the Program will automatically prevent progression to the next semester.
9. Courses required in the Program that are taken before admission to the Program (e.g. MOLB 3610: Principles of Biochemistry and ZOO 3120: Integrative Physiology) are not automatically applicable toward the PharmD degree. The student may apply for a waiver of the requirement (but not the credits).
10. Students re-admitted to the Program are required to repeat all coursework, including electives.
11. To progress to the next semester in the Program, the SOP requires that all students:
 - a. Complete all required courses in a semester with a grade of C or better.
 - b. Complete at least 12 hours of coursework applicable to the pharmacy degree each semester (special circumstances will require submission of a petition requesting permission to register for less than 12 hours).
 - c. Have a GPA of 2.0 or better in both university coursework and professional program courses each semester.
12. Failure to meet any academic standards for one semester results in notification that the student is not making satisfactory progress and is being stopped from advancing in the program. It may also result in termination from the Program.
13. Failure to meet any academic standards for two semesters (not necessarily consecutive) results in automatic termination from the Program.
14. Graduation with a PharmD degree requires a cumulative GPA of 2.50 in all coursework taken as a professional student (both total university coursework GPA and required Program GPA [all PHCY, ZOO and MOLB courses]).

Elective Credits Policy

The purpose of electives at the School of Pharmacy (SOP) is to complement the pharmacy curriculum, expand knowledge within a specific pharmacy discipline and to ensure completion of the general liberal arts education of the University of Wyoming. Therefore, the following policies have been approved by the faculty for the Doctor of Pharmacy professional program (hereafter, Program).

1. As published in the University Bulletin and SOP brochure students are required to complete a minimum number of electives, specific for the student's year of matriculation into the Program. This number may vary and may be modified as adjustments are made to the professional curriculum to comply with accreditation standards. Students will be made aware of this number during initial orientation into the Program and kept informed of any changes during their stay in the academic program.
2. Students must take elective courses to satisfy first the requirements of the University Studies Program (hereafter, USP) and then complete the remaining required electives credits as general elective coursework (Program-approved required number of elective hours).
3. Students are required to complete all USP requirements even if they exceed the minimum number of elective hours initially defined in their Program in order to graduate from UW.
4. All general elective coursework must be upper division (UW 3000 level or above) to ensure adequate rigor appropriate to a professional program.
 - a) All University of Wyoming online courses at 3000 level or above are accepted for elective credit toward the Program.
 - b) Transfer or online courses equivalent to UW 3000 level or above from other accredited four-year institutions may be honored as elective credits toward the Program.
5. All required hours (including electives) must be completed by students before progressing into the P4 rotation year. Students will not be allowed to progress toward the 4th year rotations if their academic records show that less than a total of 107 credits were completed and/or university studies requirements were not fulfilled.
6. When an elective course is approved through a petition, enrollment in the course must occur during the semester for which it was approved, i.e. if the student changes his/her mind the course will have to be petitioned again to be taken during another semester.

7. Courses offered through any community colleges, including Wyoming community colleges, regardless of their level or type (online or not), are usually neither transferable nor accepted as elective credits toward the Program.
8. Students shall not take electives as Satisfactory/Unsatisfactory (S/U) credit.
9. All courses taken in the preprofessional program or to fulfill requirements in a previous degree cannot be retaken to count as elective hours in the Program.
10. Credit by exam through the Foreign Languages Dept. will not be accepted as fulfillment of elective requirements in the Program. However, it is a student's right to test out for Wyoming History and Government, and Physical Education lecture while receiving elective credits toward the Program and fulfilling USP requirements.
11. For procedures and handling of all exceptions to these policies, the students should consult the SOP brochure, the student handbook, the SOP website, or check with the Manager of Pharmacy Student Services or the Associate Dean for Student Affairs.

Curriculum

The School of Pharmacy offers only the four-year curriculum leading to the Doctor of Pharmacy (Pharm.D.) degree.

In order to keep abreast with changes in pharmaceutical education, the following curriculum is subject to change or modification as required by accrediting board. Students should be aware that changes must be expected and they will be included in their academic program. The School of Pharmacy does not plan to change graduation requirements inadvertently, but does reserve the right to change any provisions or requirement deemed necessary at any time within the student's term of residence. Students should note that classes are usually scheduled Monday through Friday, but may include some evening and weekend coursework.

Doctor of Pharmacy Required Curriculum

Suggested Course Sequence and Courses

FIRST YEAR [PH1]: Fall		Hrs.
MOLB	3610	4
PHCY	6100	4
PHCY	6101	1
PHCY	6185	1
PHCY	6106	2
ZOO	3120	4
Total Hrs.		16

FIRST YEAR [PH1]: Spring		Hrs.
PHCY	4450	4
PHCY	6102	4
PHCY	6352	3
PHCY	6354	2
PHCY	6110	3
PHCY	6170	1
PHCY	6285	1
Total Hrs.		18

SECOND YEAR [PH2]: Summer		Hrs.
PHCY	6480	4
PHCY	6482	4
Total Hrs.		8

SECOND YEAR [PH2]: Fall		Hrs.
PHCY	6210	3
PHCY	6245	3
PHCY	6220	3
PHCY	6230	4
PHCY	6250	3
PHCY	6280	1
Total Hrs.		17

SECOND YEAR [PH2]: Spring		Hrs.
PHCY	6211	3
PHCY	6231	4
PHCY	6241	3
PHCY	6251	3
PHCY	6270	1
Elective	.....	4
Total Hrs.		18

THIRD YEAR [PH3]: Fall		Hrs.
PHCY	6312	3
PHCY	6341	3
PHCY	6350	4
PHCY	6356	1
Electives	.....	3
Total Hrs.		14

THIRD YEAR [PH3]: Spring		Hrs.
PHCY	6342	3
PHCY	6343	2
PHCY	6351	4
PHCY	6357	2
PHCY	6103	2
PHCY	6104	1
PHCY	6370	1
Total Hrs.		18

FOURTH YEAR [PH4]: Consists of nine experiential rotations of four credit hours each and three reflective learning weeks. Rotations are considered full-time. Students may not enroll in any other coursework concurrent with rotations. Consequently, all other coursework (107 credits) must be satisfactorily completed before enrollment in P4 coursework. Note: Students will be required to live in locations other than Laramie when enrolled in experiential rotations. Responsibility for living cost and travel arrangements associated with experimental rotations rests with the student.

FOURTH YEAR [PH4]: Summer, Fall, and Spring

	<i>Hrs.</i>
Experiential Rotations 1.....	4
Experiential Rotations 2.....	4
Experiential Rotations 3.....	4
Experiential Rotations 4.....	4
Experiential Rotations 5.....	4
Experiential Rotations 6.....	4
Experiential Rotations 7.....	4
Experiential Rotations 8.....	4
Experiential Rotations 9.....	4
PHCY 6485	1
PHCY 6485	1
PHCY 6485	1
Total Hrs.	39

Students must complete the following Core or Required Experiential Rotations (subject to change):

- 6470-Internal Medicine I
- 6471-Internal Medicine II
- 6473-Ambulatory Care I
- 6480-Intro to Community Pharmacy
- 6481-Advanced Community Pharmacy
- 6482-Intro to Institutional Pharmacy
- 6483-Advanced Institutional Pharmacy

Plus 4 Elective Rotations (PHCY 6465)**Pharmacy (PHCY)**

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

3670. Historical Foundations for the Health Care Professions. 3. Provides basis for understanding roles of health care professionals of today. Examines societal evolution of the arts and sciences that provide the foundation upon which the health sciences are established. *Prerequisite:* 3 semester hours of history or consent of instructor.

4160. Problems in Pharmacy. 1-4 (Max. 8). Original investigation on a library or laboratory problem concerned with a definite phase of work in pharmacy. *Prerequisite:* consent of instructor.

4162. Analytical Methods of Pharmaceuticals. 2. Laboratory with a preceding lecture. Covers common extraction techniques and instrumental methods for drug analysis. Methods include TLC, GC, HPLC, IR, and UV/Vis spectrophotometry. Students perform qualitative and quantitative analyses. Also, an introduction to statistics used in drug analysis and limitations of detection methods are given. Dual listed with PHCY 5162. *Prerequisite:* CHEM 2340.

4170. Pharmacy Seminar. 1-4 (Max. 8). Students present oral reports on selected topics of pharmaceutical interest for discussion by the group. *Prerequisite:* consent of instructor.

4210. Pharmacognosy Laboratory. 1. Analytical essays of drugs from natural sources, library research on natural product and forensic science chemistry. *Prerequisite:* CHEM 3340.

4370 [3630]. Phytomedicinal Agents. 2. Evaluates herbal medicines from scientific viewpoint. Introduces chemistry, pharmacology, toxicology and therapeutic use of selected phytomedicinal agents. *Prerequisite:* advanced standing in nursing, professional program in pharmacy or consent of instructor.

4380 [3620]. Ethnopharmacology. 3. [C2, G1↔(none)] Interdisciplinary study of human use of medicinal plants in a traditional context. Develops comprehensive view, including cultural perspective as well as western biomedical description. *Prerequisites:* junior standing; LIFE 1000 or 1010.

4450. Pathophysiology. 4. Clinical concepts of dynamic disease processes in humans. Biochemical, physiological, and morphological disease mechanism are related to symptomatology and treatment. *Prerequisites:* LIFE 1010, CHEM 1000 or 1020 and 1030, KIN/ZOO 2040, 2041, ZOO 3115 or 3120. (Normally offered spring semester)

4470 [3510]. Fundamentals of Pharmacology. 4. Studies pharmaceutical agents used for treatment, diagnosis or prevention of disease with particular emphasis on mechanisms of action, therapeutic and adverse affects. *Prerequisite:* PHCY 4450. (Normally offered fall semester)

4550. Non-Prescription Medications and Devices. 3. Develops knowledge and skills to help health care professionals function as therapeutic advisors to clients in the self-care of disease states amenable to management with non-prescription medication and/or devices. *Prerequisites:* PHCY 4450 or consent of the instructor.

4660. Health Care Law. 3. A survey of health care law for students in health care programs, law students, and other matriculated students. The subject matter will include but not be limited to the following: malpractice, licensing, informed consent, reform, reproduction and advance directives. Dual listed with PHCY 5660. *Prerequisite:* consent of instructor.

5140. Pharmacotherapy for Primary Care. 3. Prepares primary care practitioners in drug therapy management for various client populations, emphasizing rural practice. Cross listed with NURS 5140. *Prerequisite:* B.S.N., baccalaureate in health care field or consent of instructor.

5162. Analytical Methods of Pharmaceuticals. 2. Laboratory with a preceding lecture. Covers common extraction techniques and instrumental methods for drug analysis. Methods include TLC, GC, HPLC, IR, and UV/Vis spectrophotometry. Students perform qualitative and quantitative analyses. Also, an introduction to statistics used in drug analysis and limitations of detection methods are given. Dual listed with PHCY 4162. *Prerequisite:* CHEM 2340.

5550. Advanced Cardiovascular Physiology and Pharmacology. 3. An advanced study in the integration of modern cardiovascular

physiology, pharmacology, biochemistry and cell biology concepts. Dual listed with PHCY 6550. *Prerequisites:* PHCY 6230 (or equivalent).

5660. Health Care Law. 3. A survey of health care law for students in health care programs, law students, and other matriculated students. Subject matter includes, but is not limited to, the following: malpractice, licensing, informed consent, reform, reproduction and advanced directives. Dual listed with PHCY 4660. *Prerequisite:* consent of instructor.

6100. Dose Form Design. 4. Extensively introduces various types of dosage forms, discusses advantages and disadvantages of each. Pharmaceutical calculations are a major component of the course, as well as physicochemical principles involved in dose form stability. *Prerequisites:* CHEM 2420 and 2440.

6101. Practical Aspects of Dosage Form Design. 1. Preparation and evaluation of dosage forms is main thrust of course. Laboratory emphasizes manipulative and mathematical skills, prescription formats, packaging and storage as they apply to pharmaceuticals. *Prerequisites:* concurrent enrollment in PHCY 6100; MATH 2100.

6102. Biopharmaceutics and Pharmacokinetics. 4. [M3↔(none)] Discusses biopharmaceutic and pharmacokinetic aspects of dosage form design. Basic pharmacokinetics and biopharmaceutics are interrelated to clinical applications. Also covers classical kinetics and dissolution. *Prerequisites:* MATH 2200 and PHCY 6100.

6103. Sterile Products. 2. An introduction to the preparation and clinical application of sterile dosage forms. Emphasizes basic principles related to preparation, dispensing and administration of parenteral medications in extended care and hospital pharmacy practice. *Prerequisites:* PHCY 6100, 6101, 6105, and concurrent enrollment in PHCY 6104.

6104. Sterile Products Laboratory. 1. A hands-on training in techniques used to prepare, dispense and administer parenteral admixtures, parenteral nutrition, chemotherapy and ophthalmics. *Prerequisites:* PHCY 6100, 6101, 6105 and concurrent enrollment in PHCY 6103.

6106 [6105]. Pharmaceutical Calculations. 2. Application of basic mathematics and quantitative reasoning to pharmaceutical calculations, emphasizing calculations of doses, dosage requirements, compounding of formulations and parenterals. *Prerequisites:* MATH 1000 or 1400.

6110. Medicinal and Natural Products Chemistry I. 3. Three-semester series that studies the physicochemical, biochemical and pharmacological properties of substances of natural and synthetic origin that are used as medicinal agents. *Prerequisites:* CHEM 2440 and MOLB 3610.

6170. Introductory Pharmacy Practicum.

1. Provides an early curricular exposure to the roles and functions of pharmacists in their work environment through a shadow experience. *Prerequisites:* satisfactory completion of PHCY 6185.

6185. Seminar: Role of the Pharmacist in Health Care.

1. Provides an overview and survey of the scope of pharmacy, including educational and licensing requirements; career opportunities, pharmacy organizations and regulatory agencies, and historical evolution. *Prerequisite:* admission to the professional program.

6210. Medicinal and Natural Products Chemistry II. **3.** Continuation of Medicinal and Natural Products Chemistry I. *Prerequisite:* PHCY 6110.

6211. Medicinal and Natural Products Chemistry III. **3.** Continuation of Medicinal and Natural Products Chemistry II. *Prerequisite:* PHCY 6210.

6220. Pathophysiology II. **3.** Continuation of PHCY 4450. Students work closely with clinical case studies. *Prerequisite:* PHCY 4450.

6230. Pharmacology I. **4.** First semester of a one-year series. Studies action of chemical agents on living systems to include pharmacodynamics, toxicology, and clinical therapeutics. Concepts are emphasized through case presentations and discussion. 4.0 credit hours; lecture with separately scheduled discussion section. *Prerequisite:* PHCY 4450.

6231. Pharmacology II. **4.** Second semester of a one-year series. Continuation of PHCY 6230. Lecture with separately scheduled discussion section. *Prerequisite:* PHCY 6230.

6241. Organizational and Societal Issues Within the Health Care System. **3.** Surveys U.S. health care system. Discusses organization, insurance programs, legislation and health care professionals. Also discusses sociological issues pertinent to the patient and illness, the role of the pharmacist, and drugs and drug use. *Prerequisite:* enrollment in the professional program, School of Pharmacy or consent of instructor.

6242. Public Health. **3.** Encompasses essentials of medical sociology, biology, chemotherapy and public health of communicable diseases; chronic diseases; and environmental health problems. *Prerequisite:* successful completion of year one of the Doctor of Pharmacy program or consent of instructor.

6245. Patient/Professional Interactions. **3.** Focuses on psychosocial and communication concepts pertaining to human interactions, with application to professional practice environments and clinical counseling situations. *Prerequisite:* enrollment in the doctor of pharmacy professional program.

6250. Drug Literature Evaluation. **3.** [W3♦WC, L] Provides a knowledge base, techniques and skills for information retrieval, evaluation of medical and pharmaceutical prac-

tice literature, and application to specific patient problems. *Prerequisite:* STAT 2050 or equivalent; WB designated course.

6251. Introduction to Therapeutics. **3.** Introduces pharmacotherapeutic principles employed in the management and monitoring of drug therapy. Assesses the impact of drug therapy on clinical laboratory parameters, metabolic states, and specific patient populations. Introduces the pharmacotherapeutic management of common disease states. *Prerequisites:* PHCY 6220, 6230.

6270. Intermediate Pharmacy Practicum. **1.** An advanced exposure to the practice of pharmacy in health care environments. *Prerequisite:* satisfactory completion of PHCY 6170.

6280 [6385]. Seminar: Pharmacy Ethics. **1.** Focuses on ethical issues confronting pharmacists in practice, pharmacy as a profession, the health care delivery system and society. *Prerequisite:* enrollment in the doctor of pharmacy professional program.

6285. Seminar: The Drug Use Process. **1.** Focuses on how and why people use pharmaceuticals; people as patients; illness and wellness behavior; drug misadventuring, and appropriate intervention strategies. *Prerequisite:* PHCY 6185 or consent of instructor.

6286. Seminar: Pharmacy Practice Theories. **1.** Focuses on the application of theories from the pharmaceutical and related literature with application to pharmacy practice. *Prerequisite:* PHCY 6285 or consent of the instructor.

6290. Topics in Pharmacology. **2.** [W3♦(none)] Writing-intensive course using topics to explore the role of drugs in health care provision. *Prerequisite:* prior credit or concurrent enrollment in PHCY 6230 or 6231 or consent of instructor.

6312. Clinical Toxicology. **3.** Focuses on biological and pharmacological effects of environmental, chemicals, OTC and prescription drug poisoning cases. Emphasis will be placed on the use of historical, laboratory and clinical data to diagnose and develop clinical management approaches for both acute and chronic poisoning cases. *Prerequisites:* PHCY 6230, MOLB 3610.

6341. Pharmacy Practice Law. **3.** Coverage of state, federal and local laws and regulations which relate directly to the practice of pharmacy. The Wyoming Pharmacy Act serves as a model for analogous laws in other states. Case law at the federal and state levels affecting pharmacy practice is analyzed and discussed. *Prerequisite:* PH3 or consent of instructor.

6342. Pharmacy Administration. **3.** Examines management of pharmaceutical services, analysis of drug distribution systems in the U.S., contemporary pharmacy practice and problems common or peculiar to all types of pharmacy services. *Prerequisite:* PH3 status.

6343. Pharmacoeconomics. **2.** Designed to provide the student with the techniques to evaluate health care economic data for application to the pharmaceutical care of patients. *Prerequisites:* MATH 2200; PHCY 6250.

6350. Therapeutics I. **4.** A study of the basic principles employed in the pharmacotherapeutic management of common disease states. Includes the pharmacist's role in monitoring drug therapy of the patient and serving as a drug consultant to the health care team. *Prerequisite:* grade of C or higher in PHCY 6251.

6351. Therapeutics II. **4.** Continuation of Therapeutics I. *Prerequisite:* grade of C or higher in PHCY 6350.

6352. Self-Care Therapeutics. **3.** Emphasizes the role of the pharmacist in pharmaceutical self care, appropriate triage and referral involving prescription, non-prescription pharmaceuticals, complimentary, alternative therapies and devices in community dwelling patients with both acute and chronic self-care conditions. *Prerequisite:* enrollment in the doctor of pharmacy professional program.

6354. Pharmacy Practice Laboratory. **2.** Emphasizes the application of patient and disease state management pharmaceutical care skills by modeling patient care clinics, community practice and institutional practice. Emphasizes patient counseling, assessment, monitoring and development of patient care plans in "mock" patient scenarios. *Prerequisites:* enrollment in the doctor of pharmacy professional program.

6356. Physical Assessment in the Evaluation of Drug Therapy. **1.** Physical examination techniques and the interpretation of physical examination data. Emphasis is on a systemic approach to the physical examination, evaluation of patient data, maintaining patient charts, monitoring of patient outcomes and development of treatment plans. *Prerequisite:* P3 status or consent of instructor.

6357. Clinical Pharmacokinetics. **2.** Pharmacokinetic principles of dosage regimen calculation and pharmacokinetic considerations relating to the use of various drugs. Clinical pharmacokinetics of therapeutically important drugs will be covered. *Prerequisite:* PHCY 6102.

6370. Advanced Pharmacy Experience Orientation. **1.** Designed to prepare the student for 4th year experiential activities by discussion of logistics, professionalism, regulatory issues, and assessment tools. *Prerequisites:* Good standing in the P3 year or consent of instructor.

6386. Seminar: Future Trends. **1.** Focuses on internal and external trends that have the potential to affect the practice of pharmacy in the future. Students are expected to discern potential trends from a variety of literature sources and project the potential effects on their future practice. *Prerequisite:* P3 status or consent of the instructor.

6465. Elective Rotation In _____ . 4 (Max. 12). Advanced practice experience in a variety of pharmacy practice, patient care, health care management, and pharmaceutical industry environments. Application of knowledge and skills with active participation in direct pharmaceutical care. Development of knowledge and skills related to specialized patient populations, health care management, and pharmaceutical industry. Students will be required to move to off-campus sites to complete this course. *Prerequisite:* grade of C or higher in PHCY 6351 and 6357.

6470. Internal Medicine I. 4. Pharmacy practice experiences with acute care patient populations in community hospitals; exposure to various disease states and patient records; evaluating drug orders in medical records, assessing problems involving patient's drug therapy, monitoring drug therapy to insure effective, safe, and economical patient care, and applying drug information skills. *Prerequisite:* grade of C or higher in PHCY 6351 and PHCY 6357.

6471. Internal Medicine II. 4. Advanced practice experiences with general medicine, acute care patient populations in community hospitals. Participation in problem solving and the therapeutic decision-making process, including drug dosage regimen, application of rational therapy. *Prerequisite:* PHCY 6470.

6473. Ambulatory Pharmaceutical Care. 4. An experiential course focusing on the pharmacist as the drug expert in a multidisciplinary health care team approach to treating ambulatory patients within the philosophy of family practice. *Prerequisites:* grade of C or higher in PHCY 6351 and PHCY 6357.

6480. Introduction to Community Pharmacy Practice. 4. Four-week rotation in community pharmacy practice completed under the guidance of a licensed pharmacist. Patient care activities will include, but not be limited to, basic patient and drug therapy assessment, performing medication histories and prospective drug utilization reviews, basic patient counseling and active participation in the medication distribution process. *Prerequisites:* grade of C or higher in PHCY 6352 and 6354 and satisfactory completion of all courses within the P1 curriculum (i.e. P2 standing).

6481. Advanced Community Pharmacy. 4. An advanced practice experience in community pharmacy that involves student learning and participation in non-dispensing models of pharmaceutical care, such as pharmacist anticoagulation clinics, vaccination clinics, smoking cessation, diabetic education, chronic disease drug therapy monitoring, self-care treatment, and indigent patient care, etc. *Prerequisite:* grade of C or higher in PHCY 6351 and PHCY 6357.

6482. Introduction to Hospital Pharmacy Practice. 4. Four-week rotation in hospital pharmacy practice completed under the guidance of a licensed pharmacist. Patient-care activities will include basic drug therapy and patient assessment, prospective drug utilization reviews, par-

ticipating in the hospital's medication distribution process, performing calculations, compounding preparations and understanding pharmacy's role within the health-system through interdisciplinary interactions. *Prerequisites:* grade of C or higher in PHCY 6352 and 6354 and satisfactory completion of all courses within the P1 curriculum (i.e. P2 standing).

6483. Advanced Institutional Pharmacy. 4. An advanced rotation in institutional pharmacy under the preceptorship of a licensed pharmacist. The student interacts with patients, health care professionals and allied health personnel to assure the best use of medications. *Prerequisite:* grade of C or higher in PHCY 6351 and PHCY 6357.

6485. Reflective Learning in Pharmacy. 1 (Max. 4). A debriefing class with emphasis on sharing experiences and making notice of the learning that has occurred during the community pharmacy practicums. This is a one week course to be held the week prior to starting practicums and repeated at 12 week intervals thereafter. Offered S/U Only. *Prerequisite:* PH4 status.

6550. Advanced Cardiovascular Physiology and Pharmacology. 3. An advanced study in the integration of modern cardiovascular physiology, pharmacology, biochemistry and cell biology concepts. Dual listed with PHCY 5550. *Prerequisites:* PHCY 6230 (or equivalent).

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Professor:

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ELIZABETH DOLE-IZZO, B.S. Colorado State University 1996; M.S.W. 2002; Academic Professional, Assistant Lecturer of Social Work 2006.

Professors Emeriti:

Boyer, Chesteen, Miller, Williams

Social workers are uniquely qualified to help people in their own environments by looking at different aspects of their lives and cultures. We work to ensure the client's personal well-being, prevent crises, counsel individuals, support families, and strengthen communities. We make sure people get the help they need, with the best resources available.

For more than 100 years, social workers have cared for people in every stage of life, from children to the elderly. Social workers help others overcome life's most difficult challenges and to manage the troubles of everyday living, including the troubles that exist due to poverty, stress, addiction, abuse, unemployment, mental illness, family change, and social violence.

The Division of Social Work prepares students for entry-level generalist social work practice. Two locations offer the social work program: the Laramie campus and the University of Wyoming/Casper College Center on the Casper College campus. Graduates receive a Bachelor of Social Work (BSW.) and are prepared to work as generalist social work practitioners with individuals, groups, families, organizations, communities, and institutions to achieve more effective and efficient social functioning.

Our program is accredited by the Council on Social Work Education. The curriculum is designed to help students acquire important knowledge and skills in the areas of values and ethics, diversity, social and economic justice, populations-at-risk, human behavior and the social environment, social welfare policy and services, social work practice, and research. Students also select elective courses in areas such as child welfare, aging, child and adolescent services, health and mental health, and disability services. The program culminates in a 450-hour supervised field practicum, which allows students to work as social workers in one of Wyoming's many human service agencies.

Criteria for Admission as an Admitted Major

Students who declare social work as their major are considered Declared Majors while taking SOWK 2000, 3530, and 3630. After completion of these classes, students apply to be Admitted Majors. Social work students must meet the following criteria to be accepted as an Admitted Major.

1. Students must earn a minimum grade point average (GPA) of 2.50 on all UW course work as well as all course work transferred into the University of Wyoming from other academic institutions.
2. Students must earn a minimum 2.50 GPA in SOWK 2000, 3530, and 3630.
3. Students must earn a grade of C or higher in SOWK 2000, 3530, and 3630.
4. Students must adhere to the NASW Code of Ethics.
5. Students cannot exhibit behavior that will impinge on the student's present or future ability to fulfill professional responsibilities as a social work professional.
6. All students seeking admission to programs in the College of Health Sciences are required to undergo a background check as specified by college policy. Criminal convictions may result in rejection of the candidate for admission to Admitted Major.
7. Students must submit an application and an application fee. (See UW Fee Book)
8. Applicants to the social work program can not receive credit for life experience.

Criteria for Social Work Majors

Once admitted as a major, social work students must:

1. Complete all social work prerequisites:
 - a. LIFE 1010
 - b. Statistics
 - c. Human Biology
 - d. SOC 1000
 - e. PSYC 1000
 - f. ECON 1010
 - g. POLS 1000
2. Achieve a C or better in all social work prerequisites.
3. Achieve a C or better in all social work courses, including six hours of required social work electives.
4. Social work classes are offered and must be completed in sequential order.
5. Maintain a 2.5 or above GPA overall every semester after admittance to Admitted Major.
6. Maintain a 2.5 or above GPA overall in all social work course work every semester after admittance to Admitted Major.
7. Registration is restricted and students must meet with their advisor each semester for enrollment.

8. Complete SOWK 4990 with a C or better.

Individuals failing to meet any of the above requirements will be placed on probation and have twelve months to remedy the situation. Because many social work courses have prerequisite requirements, receiving a grade lower than a C in a social work course may prevent the individual from moving forward in the social work program. Individuals on probation must meet with their advisor to develop a plan for success. This written plan must be placed in the student's file. If the individual does not remedy the situation in the time specified, the student will be terminated from the major. The individual may apply for re-admission into the major if and when they raise their grades.

Field Practicum Process for Social Work Students

All students complete a 450-hour (12 credit hours) field practicum experience in a community-based social agency or social program. Field practicum sites exist throughout the state of Wyoming and many students are placed outside Laramie. Students apply for this program the semester before their actual placement. Students must complete a Field Placement Application and meet with the Field Coordinator to determine a field location (please review BSW Field Practicum Manual). Background checks and drug screenings may be required by some agencies even though the College of Health Sciences has received a background check during admission to the major.

Field practicum includes field seminars scheduled throughout the semester(s). For the practicum, the grade of D is interpreted as performing below expectations and will not be considered satisfactory completion of the practicum, hence of the BSW program. Based on input from the student, the field instructor, and the faculty liaison during the field evaluation, the field coordinator will determine what remediation would be required. The plan will clarify course objectives and professional skills upon which the student needs to improve. A student wishing to continue in the program would need to reapply for a field placement. Upon approval of the request for placement by the field committee, the student may then repeat the practicum experience. Consistent with the University policy, the most recent grade would be the grade calculated into the GPA. The grade of F is interpreted as not meeting minimal requirements of the course; failure to complete the minimum clock hours in the field placement and/or seminar component of the course; failure to complete written assignments in a satisfactory manner; violation of one or more of the tenets of the NASW Code of Ethics (see Appendix B and Termination of Practicum section in the practicum manual); and/or failure to withdraw formally or to terminate the course. A student receiving

an F in the practicum will be automatically dismissed from the BSW program with no opportunity to reapply or re-enter. Grades and dismissals may be appealed. (See most current BSW Student Handbook for appeal procedures.)

Criteria for Graduation

The program requires 120 credit hours to graduate. Students must have completed all social work requirements, 48 upper-division hours, maintain a 2.5 GPA overall, a 2.5 GPA in social work coursework, and have achieved a grade of C or better in all social work courses.

Declared Major Plan of Study (4 years)

FRESHMAN YEAR: Fall	Hrs.
PSYC 1000	4
LIFE 1000 or 1010	4
ENGL 1010	3
PEAC 1001	1
USP Intellectual Community course (I)	1-3
Free Elective	3
Total Hrs.	16-18

FRESHMAN YEAR: Spring	Hrs.
SOC 1000	3
POLS 1000 (V)	3
USP Humanities elective (CH)	3
Science (SB, SP, SE)	4
Free Elective	3
Total Hrs.	16

SOPHOMORE YEAR: Fall	Hrs.
USP Cultural Context (CA)	3
MATH 1000 or 1400 (QA)	3
ECON 1010	3
USP Global Awareness course (G)	3
USP Information Literacy course (L)	1-3
Free Elective	3
Total Hrs.	16-18

SOPHOMORE YEAR: Spring	Hrs.
STAT 2050 or 2070 (QB)	4
USP Oral Communications course (O)	3
USP Writing 2 course (WB)	3
USP Diversity course (D)	3
Free Elective	2
Total Hrs.	15

JUNIOR YEAR: Fall	Hrs.
SOWK 2000	3
SOWK 3530	3
SOWK 3630	4
Free elective	3
Free Elective	2
Total Hrs.	15

JUNIOR YEAR: Spring	Hrs.
SOWK 3540	3
SOWK 3640	3
Free Elective	3
Free Elective	3
Total Hrs.	12

SENIOR YEAR: Fall	Hrs.
SOWK 3650	3
SOWK 4560	3
SOWK 4990	6
Social Work Elective	3
Total Hrs.	14

SENIOR YEAR: Spring		Hrs.
SOWK 4570 (WC)	.....	3
SOWK 4460	.....	3
SOWK 4990	.....	6
SOWK elective	.....	3
Total Hrs.		15

Two-Year Program Plan of Study

Two year program for individuals who are juniors transferring from another UW major or entering UW with an associates degree from a Wyoming community college. The chart below assumes that 60 credit hours are transferred into the University and that USP requirements have been met.

JUNIOR YEAR: Fall		Hrs.
Human Biology	.....	4
ECON 1010	.....	3
SOWK 2000	.....	3
SOWK 3530	.....	3
SOWK 3630	.....	4
Total Hrs.		17

JUNIOR YEAR: Spring		Hrs.
STAT 2050/2070	.....	4
SOWK 3540	.....	3
SOWK 3640	.....	3
Social Work Elective	.....	3
Social Work Elective	.....	3
Total Hrs.		15

SENIOR YEAR: Fall		Hrs.
SOWK 3650	.....	3
SOWK 4560	.....	3
SOWK 4990	.....	6
Elective	.....	3
Total Hrs.		15

SENIOR YEAR: Spring		Hrs.
SOWK 4460	.....	3
SOWK 4570	.....	3
SOWK 4990	.....	6
Elective	.....	2
Total Hrs.		14

Social Work (SOWK)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1001. Intellectual Community in Social Work. 3. [(none)↔I, L] Provides a theoretical examination of the mechanisms of oppression. Content focuses on individual, group, and societal functioning. Also provides an introduction to the profession of social work and a foundation in information literacy. *Prerequisites:* none.

1002. Intellectual Community: The Social Work Profession. 3. [(none)↔I, L] Provides an introduction to the purpose and philosophy of social work. Content focuses on various roles that social workers play and the ethical dilemmas they encounter. Also provides an introduction to developing research questions in social work and the problem solving method. *Prerequisites:* none.

1050. Topics: Social Work. 1-6. Various topics in social work.

1900. Women and Leadership. 3. [(none)↔O, L] Students examine theoretical, historical, and cultural aspects of leadership, values in leadership, gender differences in leadership styles, and practical applications of leadership skills through oral communication and information literacy. Individual and collaborative work is expected. Cross listed with WMST 1900. *Prerequisites:* one course in women's studies.

2000 [3000]. Foundations Of Social Work. 3. Introduces social work and social welfare through an overview of the history, philosophy, ethics, values, methods, and fields of practice to generalist social work. *Prerequisites:* none.

3530. Human Behavior and Social Environment I. 3. Covers theories and knowledge of human biopsychosocial development within a systems framework, with a focus on individuals and families. *Prerequisites:* LIFE 1000, 1003, 1010, or 1020, SOC 1000, PSYC 1000 with a C or better. And SOWK 2000 which can be taken concurrently. (Normally offered fall semester)

3540. Human Behavior and Social Environment II. 3. Covers theories and knowledge of human biopsychosocial development within a systems framework, with a focus on groups, communities, organizations and institutions. *Prerequisites:* SOWK 3530. (Normally offered spring semester)

3630. Social Work Methods I. 4. Introduces generalist social work practice, particularly with individuals and families, covering the nature of social work practice, theoretical perspectives, ethics and values, the social work relationship, interviewing, the problem-solving process and intervention skills. *Prerequisites:* Complete SOWK 2000 or concurrent enrollment. Tracking major status.

3640. Social Work Methods II. 3. Focuses on group work within the generalist social work perspective, covering theoretical perspectives, ethics and values, and problem-solving skills applied to task and treatment groups. *Prerequisites:* SOWK 3540 or concurrent enrollment; SOWK 3630; advanced major status.

3650. Social Work Methods III. 3. Applies the problem solving method to interventions with organizations, communities and institutions within the generalist social work perspective. *Prerequisites:* completion of SOWK 3540 and 3640 with a C or better; admitted major status.

4020. Disabilities: Supports and Services. 3. Explores needs of people with disabilities and related policies and service delivery systems from social work's person in environment perspective. Issues explored in light of social work values and ethics, and social and economic justice. Issues of diversity within disabilities services considered throughout. Cross listed with WIND 4020. Dual listed with SOWK 5020. *Prerequisite:* Consent of instructor.

4030. Social Work and Mental Health. 3. Presents overview of mental health services, policy, nosologies, history and interventions. Information examined in light of social work values

and ethics, concern for populations-at-risk, and social and economic justice. Issues of diversity in mental health arena considered throughout. Dual listed with SOWK 5030. *Prerequisite:* advanced major in social work.

4060. Social Work with Diverse Populations. 3. Examines social works' roles and issues related to human diversity. Social work values and ethics and social and economic justice are explored throughout. Dual listed with SOWK 5060. *Prerequisite:* junior standing or consent of instructor.

4460. Social Welfare Policies and Issues. 3. [C2↔(none)] Analyzes issues, programs, and policies in social work and social welfare. *Prerequisites:* POLS 1000; ECON 1010, senior standing, advanced major in social work.

4480. Introduction to Aging Services. 3. Surveys issues in aging and social work's role, status and function in the field of gerontology. *Prerequisite:* SOWK 2000 or consent of instructor.

4550 [3550]. Child Welfare Services. 3. Examines issues of child and family welfare in the context of national, state, and local policy and practice. Social and economic justice are examined as they relate to interventions with children and families. Dual listed with SOWK 5550. *Prerequisites:* SOWK 2000; SOWK 3530.

4560. Social Work Research. 3. [M3↔(none)] Introduces social work research and its methods. Stresses critical thinking. Prepares students to use research in practice. *Prerequisites:* completion of STAT 2050 and 2070 and SOWK 3540 and 3640 with a grade of C or better; admitted major status.

4570. Research Project. 3. [W3↔WC] Requires the design and conduct of an empirical social work research project. *Prerequisites:* STAT 2050 or 2070; SOWK 4560; advanced major status.

4780. Seminar: _____ . 1-9 (Max. 15). Consideration of special topics of current interest in social work. May be repeated for a maximum of 15 hours credit when the seminar topic is different. *Prerequisite:* advanced major status; or consent of instructor and junior standing for non-social work majors.

4850. Institutional Discrimination. 3. Examines social work's roles and issues related to human diversity. *Prerequisite:* junior standing or consent of instructor.

4980. Independent Study. 1-3 (Max. 6). Consideration of topics of current social work interest in consultation with a member of the faculty. *Prerequisites:* advanced major status and consent of instructor.

4990. Social Work Practicum. 6-12 (Max. 12). Represents the culmination of preparation for entry level generalist social work practice. Supervised practice in the knowledge, values and skills learned in the classroom. *Prerequisites:* SOWK 2000, 3530, 3630, 3640, 3540, and co-requisite of SOWK 3650.

Wyoming INstitute for Disabilities (WIND)

147 Health Sciences Building,
766-2761

FAX: (307) 766-2763

Web site: www.uwyo.edu/wind

Executive Director: Keith Miller, Ph.D.

Professor:

KEITH A. MILLER, B.S. Bowling Green University 1966; M.A. 1967; Ph.D. 1970; Professor Emeritus, Social Work 2007, 1988, 1972.

Assistant Professor:

MICHELLE JARMAN, B.A. University of California at Berkeley 1989; M.A. Northern Michigan University 2000; Ph.D. University of Illinois at Chicago 2006; Assistant Professor of Disability Studies 2007.

Academic Professional/Senior

Lecturer:

KENNETH B. HEINLEIN, B.S. University of Wyoming 1975; M.A. Colorado State University 1979; Ph.D. 1994; Academic Professional/Senior Lecturer 2001, 1995.

Academic Professional/Assistant

Lecturer:

SANDY ROOT-ELLEGE, B.S. University of Wyoming 2001; M.A. 2003; Assistant Lecturer 2004.

W. DAVID SCHAAD, B.S. Utah State University 1984; M.H.R. University of Oklahoma 1988; Assistant Lecturer 2004.

LAURIE MARQUARDT WESTLAKE, B.S. University of Wyoming 1978; B.A. 1986; M.Ed. 1998; Ph.D. 2005; Assistant Lecturer 2006.

Advisory Committee:

Beverly Sullivan, Chair; Interim Dean,
College of Health Sciences

Thomas Buchanan, President,
University of Wyoming

William A. Gern, Vice President, Research
Martin Agran, College of Education

Susan Bentley, Family Specialist, UPLIFT
Karen Bowyer, Administrative
Assistant, WIND

Peg Brown-Clark, Director, Special
Education Unit, Wyoming
Department of Education

Shannon Buller, Executive Director,
Governor's Planning Council on
Developmental Disabilities

Mary Comin, Accounts Manager, WIND
Kendall Corbett, Coordinator,
Consumer Activities, WIND

Dorothy Cronin, Executive Director, Brain
Injury Association of Wyoming

Deborah Fleming, Clinical Professor of
Geriatrics, College of Health Sciences

George Garcia, Self-Advocate

Jeff Gardner, Vice President, ARK

Industries and Rehabilitation Center
Fred Lamb, Self Advocate

Richard Leslie, Self Advocate
Jim McIntosh, Administrator, Division
of Vocational Rehabilitation,
State of Wyoming

Cliff Mikesell, Administrator,
Developmental Disabilities
Division, State of Wyoming

Brenda Oswald, CEO/President, Alliance
for Self Determination, Inc.

Lori Regnier, Advocate, Protection
and Advocacy Systems, Inc.

The Wyoming INstitute for Disabilities (WIND) is part of a national network of University Centers of Excellence in Developmental Disabilities Education, Research and Service (UCEDD). These centers provide a broad array of interdisciplinary academic, clinical, and research experiences of people with disabilities—particularly developmental disabilities. A wide variety of disciplines contribute to the study of disabilities.

WIND courses examine the historical, cultural, and contemporary experiences of people with disabilities from an interdisciplinary developmental perspective. Students will gain knowledge of the purpose that education, technology, and community supports play in the lives of people with disabilities. This program is intended to complement the degrees of those who also have an interest in disability issues.

WIND offers a disability studies minor which is an interdisciplinary approach to examining the interplay between the lived experience of disability and the social construct of disability. The minor provides a balance between theory and practical hands-on application. Students will gain a broad understanding of disability issues, rather than specific disciplinary skills and techniques. The minor consists of 18 credit hours. Specific information about the disability studies minor may be obtained by calling (307)766-5060 or visiting the WIND office located in the Health Sciences Building, room 147.

Learning Outcomes

We expect that students who complete the Disability Studies minor will have:

- Improved understanding of contextual and cultural issues surrounding disability;
- Improved understanding of the history of disability movements, including legislation, litigation, laws, and protests;
- Improved skills in working with individuals with disabilities;
- Increased knowledge of types and causes of various disabilities;
- Improved knowledge of local, state, and national supports and services available to people with disabilities;
- Improved knowledge of the impact of disability within families and recognition of family strengths and resources;

- Increased knowledge of the careers related to working with people with disabilities;
- Increased understanding of the impact of cultural and personal attitudes toward disabilities.

Wyoming INstitute for Disabilities (WIND)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

2100. Introduction to Disability Studies.

3. [(none)↔CH, D] Provides students with an overview of the disability studies field. Students gain introductory knowledge about the disability studies perspective by examining the work of scholars from many academic backgrounds, which will facilitate students' understanding of the interdisciplinary nature of disability studies. *Prerequisites:* none.

2500. Topics in _____ 1-3 (max. 6). Provides students with the opportunity to gain introductory knowledge by examining various topics in the field of Disability Studies. *Prerequisite:* Consent of instructor.

2700. Women with Disabilities. 3. [(none)↔D] Provides an introductory examination of the interplay between issues, challenges, and strengths of the experience of women with disabilities. Current research and theories from disabilities studies and women's studies will serve as lenses for this examination of disability as a social construct. Cross listed with WMST 2700. *Prerequisites:* none.

3160. Disability Civil Rights Movements. 3. Provides a review and analysis of the various disability rights movements in the US and the social changes that have resulted from these movements. This includes the early roots following the French Revolution through the protest era of the 1960s to present efforts to change federal policy. *Prerequisites:* past or concurrent enrollment in SOC 100 or WIND 2100.

4020. Disability: Supports and Services.

3. [(none)↔CS] Explores disability issues and related policies and service delivery systems. Issues explored in light of social values, ethics, and social and economic justice. Issues of diversity within disabilities services and supports considered throughout. Cross listed with SOWK 4020. Dual listed with WIND 5020. *Prerequisite:* Consent of instructor.

4500. Practicum. 3. Provides students practical experience in the field of Disability. Typically taken during a student's final semester in the Disability Studies Minor. *Prerequisites:* completion of WIND 2100, and WIND elective, WIND 4020 (or concurrent enrollment).

4990. Topics in _____ 1-3 (max. 12). Provides upper division/graduate students with the opportunity for critical analysis and in-depth examination of various topics in the field of Disability Studies. *Prerequisite:* consent of instructor.

Professors:

JACQUELYN BRIDGEMAN, B.A. Stanford University 1996; J.D. University of Chicago 1999; Professor of Law 2008, 2002.

JOHN M. BURMAN, B.A. University of Wyoming 1978; J.D. University of Minnesota 1981; Carl M. Williams Professor of Law and Ethics 1993, 1989.

DIANE E. COURSELLE, B.A. Fordham University 1987; J.D. Loyola University-New Orleans 1991; Professor of Law 2006, 1999.

DEBRA L. DONAHUE, B.S. Utah State University 1974; M.S. Texas A&M University 1977; J.D. University of Colorado 1989; Professor of Law 1999, 1993.

STEPHEN M. FELDMAN, B.A. Hamilton College 1977; J.D. University of Oregon 1982; J.S.M. Stanford University 1986; Jerry W. Housel/Carl F. Arnold Distinguished Professor of Law 2002.

HARVEY GELB, A.B. Harvard University 1957; J.D. 1960; Kepler Chair of Law and Leadership and Professor of Law 1979.

TIMOTHY G. KEARLEY, B.A. University of Illinois 1971; J.D. 1976; M.L.L. University of Washington 1977; Professor of Law and Director, Law Library 1993.

JERRY R. PARKINSON, B.S. Northern State College 1976; M.P.A. University of South Dakota 1981; J.D. University of Iowa 1985; Professor and Dean, College of Law 1998.

MARY D. PRIDGEN, B.A. Cornell University 1971; J.D. New York University 1974; Professor of Law 1985, 1983; Associate Dean and Carl M. Williams Professor of Law and Social Responsibility 2002.

ALAN ROMERO, B.A. Brigham Young University 1990; J.D. Harvard University 1993; Professor of Law 2007, 2003.

JOEL L. SELIG, B.A. Harvard University 1965; J.D. 1968; Professor of Law 1984.

MICHAEL R. SMITH, B.S. Florida State University 1982; J.D. University of Florida 1985; Winston S. Howard Distinguished Professor of Law 2006.

ELAINE A. WELLE, B.A. University of Colorado 1977; M.B.A. 1981; J.D. University of Arizona 1986; Professor of Law 1999, 1993.

Associate Professor:

JAMES M. DELANEY, B.A. University of Washington 1985; J.D. Gonzaga University 1992; LL.M. University of Florida 1997; Centennial Distinguished Associate Professor of Law 2006, 2003.

ERIC A. JOHNSON, B.A. University of Washington 1984; J.D. University of Michigan 1988; Associate Professor of Law 2007, 2004.

Assistant Professors:

MICHAEL DUFF, B.A. West Chester University 1991; J.D. Harvard University 1995; Assistant Professor of Law 2006.

ROBERT W. SOUTHARD, B.A. University of Notre Dame 1980; J.D. University of Michigan 1984; Assistant Professor of Law 2006.

Academic Professionals:

N. DENISE BURKE, B.A. University of Wyoming 1979; J.D. 1993; Assistant Dean 2003.

DEBORA PERSON, B.A. Arizona State University 1981; M.L.S. Rutgers University 1992; Library Associate 1993; Associate Law Librarian 2005, 1994.

TAWNYA PLUMB, B.A. University of Wyoming 1996; M.L.I.S. University of Texas at Austin 1998; Electronic Services and Assistant Librarian 2004.

The College of Law was founded in 1920. The goal of the college is to provide a sound and thorough education in the law that will prepare the student to practice law in accordance with the highest standards of professional competence and responsibility. The emphasis in instruction is on analysis and understanding of legal principles and the development of skills necessary to the practice of the profession. The course of study will prepare a graduate to practice in any jurisdiction which has adopted the Anglo-American system of law.

The curriculum of the College of Law consists of three years of study within the college. Required courses necessary to basic legal knowledge make up the first two semesters of study, while courses in the final four semesters are largely elective. Students become eligible to receive the Juris Doctor (J.D.) degree upon successful completion of 89 semester credit hours of law courses with a grade point average of at least 2.0.

The college acts as a law center for Wyoming. It serves lawyers, judges, and government by a program of continuing legal education for attorneys and others interested in significant legal developments, by research projects aimed at improving state law, and by publishing the Wyoming Law Review.

Accreditation

The college is approved by the American Bar Association and its graduates are eligible for admission to the bar in every state. In many states there are additional requirements including residence, registration and prelegal education. A student planning to practice in a particular state should check its rules for admission to the bar.

The college is also a member of the Association of American Law Schools. Membership is conditioned upon the maintenance of an adequate teaching staff and library, the offering of a sound educational program and adherence to prescribed standards for the admission and graduation of students.

Prelegal Curriculum

There is no prescribed or required set of courses for prelegal work. A student must usually have a B.A. or B.S. degree before beginning the professional study of law. There are no restrictions on the field in which the degree is earned.

The objective of prelegal study should be to acquire knowledge and skills useful in the study and practice of law. College study should prepare the student for law school by developing language comprehension and use, understanding of political, economic, social and cultural institutions, and the ability to think logically and creatively. Courses promoting these objectives are included in the basic requirements for most undergraduate degrees. The choice of a major should be determined by the student's academic interest and professional objective in law.

Valuable background may be acquired through the study of English, history, philosophy, economics, political science, psychology, sociology, business administration, mathematics and the natural sciences.

For additional information, see the current Official Guide to ABA-Approved Law Schools which includes material on the law and lawyers, pre-law preparation, applying to law schools, and the study of law, together with individualized information on most American law schools. It may be obtained at college bookstores or ordered from Law Services, Box 2000, Newtown, PA 18940, (215) 968-1001, or www.lsac.org.

Admission Requirements and Procedures

Admission to the professional curriculum in law is granted by the admissions committee of the College of Law. The College of Law restricts the number of entering students to a class size consistent with its facilities and its educational objectives. In evaluating an application, the committee considers the applicant's undergraduate college scholastic record and score on the Law School Admission Test (LSAT).

Other criteria relevant to the probability of success in the study and practice of law will also be considered.

1. Prior to beginning work in the College of Law, applicants must have a bachelor's degree from an accredited college or university, unless they have requested and been granted one of the following exceptions:
 - a. An applicant who needs not more than 6 semester hours of college credit to qualify for a bachelor's degree may be admitted in exceptional cases to law school if the committee determines that the applicant has sufficient education and preparation for the study of law; has an outstanding undergraduate scholastic record; and has an approved program signed by the appropriate undergraduate official indicating that the remaining requirements for the bachelor's degree may be met by summer school attendance or by other means that will not interfere with the study of law.
 - b. In very exceptional cases, an applicant without a bachelor's degree may be admitted as a special student and become a candidate for the professional degree in law. The applicant must furnish evidence to satisfy the committee that age, experience, and training have equipped the individual to engage successfully in the study of law despite the lack of the required prelegal education.

2. Every applicant must take the Law School Admission Test. A packet giving information about the test, the dates on which it is given, and centers at which it can be taken, sample questions and an application form, may be obtained from Law School Admission Council, Box 2000, Newtown, PA 18940, by phone at (215) 968-1001, online at www.lsac.org, or from the College of Law.
3. Every applicant must register with the Law School Data Assembly Service (LSDAS) by submitting the appropriate form included with the LSAT packet. The LSDAS will prepare an analysis of the applicant's undergraduate transcripts and send copies to the college.
4. Every applicant must submit a College of Law application form. This form and the College of Law Bulletin may be obtained from the College of Law, Dept. 3035, 1000 E. University Ave., Laramie, WY 82071, by phone at (307) 766-6416, or online at www.uwyo.edu/law.
5. Official transcripts sent directly to the College of Law from each college attended must be on file in the Admissions Office at least 30 days before the student's registration date.

Application Deadline

An initial entering class will be selected from completed applications on file on March 1. An application is complete only when the college has received the LSAT score, the LSDAS transcript analysis, and the College of Law application form. Applications completed after March 1 will be considered in filling vacancies which occur in the entering class initially selected.

Admission With Advanced Standing

Transfer students are admitted only when the College of Law facilities and curriculum permit. No more than 30 semester credit hours may be transferred from another law school. Transfer credit will not be given for courses in which a grade of less than C or its equivalent was received. Applicants who have more than 30 credit hours will be admitted only in exceptional cases and will only be able to transfer 30 credit hours. Applicants admitted must satisfy the requirements for graduation established by the College of Law, including such other requirements as may be imposed as a condition of admission. Students interested in transferring should write the College of Law for information concerning application procedures.

Joint Degree Program

The College of Law, in conjunction with the College of Arts and Sciences, offers a joint J.D./M.P.A. program. The College of Law also offers a joint J.D./M.A. in Environment and Natural Resources in conjunction with the Haub School of Environment and Natural Resources. For information regarding this joint degree program, contact the College of Law.

Nonprofessional Degree Students

Graduate students from other colleges of the University of Wyoming may be permitted to take one or more law courses on an S/U basis for non-law credit when the following conditions are met: the law course taken is acceptable for their degree program and the prior written approval of the professor assigned to the course and the associate dean of the College of Law has been obtained. In order to obtain audit or visitor privileges, students must obtain prior written approval of the professor assigned to the course and the dean or the associate dean of the College of Law. For further information and requirements contact the Associate Dean, College of Law, Dept. 3035, 1000 E. University Ave., Laramie, WY 82071.

Course descriptions are contained in the *College of Law Bulletin* which may be obtained by contacting the College of Law Admissions Office, College of Law, Dept. 3035, 1000 E. University Ave., Laramie, WY 82071, (307) 766-6416, lawadmis@uwyo.edu, or online at www.uwyo.edu/law.

Armed Forces Services

LTC. Brent Reinhardt, Commander, Army ROTC
LtCol. Michael J. Nutter, Commander, Air Force ROTC

It has been the consistent policy of the university in cooperation with the federal government to make courses in military science and aerospace studies available on a voluntary basis to all qualified students.

Academic credits for Army and Air Force Reserve Officers' Training Corps (ROTC) are applied toward baccalaureate and graduate degrees in varying amounts depending upon the degree plan of the student and as determined by the college concerned.

Army ROTC

Department of Military Science
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Professor:

BRENTON E. REINHARDT, Lieutenant Colonel, U.S. Army, Adjutant General Corps; B.A. St. Lawrence University 1989; M.P.A. University of Oklahoma 1999; Professor of Military Science 2006.

Assistant Professors:

PAUL E. HESCO, Lieutenant Colonel, U.S. Army, Field Artillery; B.S. University of Wyoming 1991; Assistant Professor of Military Science 2005.

BRYAN K. HULIN, Captain, U.S. Army, Special Forces; B.A. Virginia Tech 1996; M.S. University of Wyoming 2001; Assistant Professor of Military Science 2008.

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JAMES G. LEAS, Lieutenant Colonel U.S. Army Special Forces; B.S. Metropolitan State College of Denver 1993; Assistant Professor of Military Science 2000.

FRED NASREDINE, Captain, U.S. Army, Field Artillery; B.A. University of Wyoming 2002; J.D. 2007; Assistant Professor of Military Science 2007.

Lecturers:

JOHNNY CORNEJO, Sergeant First Class, U.S. Army; Field Artillery, Military Science Instructor 2008.

MATTHEW ORIGER, Master Sergeant, Senior, U.S. Army; Military Science Instructor 2008.

The Department of Military Science - Army ROTC faculty is composed of U.S. Army officers and senior noncommissioned officers. These officers hold bachelors' and masters' degrees in a variety of fields. Noncommissioned officers hold associate degrees in a variety of fields. Officers' military education includes completion of the Officer Basic Course and the Officer Advanced

Course. Several faculty are graduates of the Army's Command and General Staff College and have completed military specialty schools such as: Flight School, Ranger School, Airborne School, Air Assault School, Special Forces School, Jumpmaster Course, Special Operations Training and Language School.

General Information

Army ROTC is a program which offers qualified college students the opportunity to graduate as officers and serve tours in the U.S. Army, the Army National Guard or the U.S. Army Reserve.

The four-year program is divided into two parts called the basic course and the advanced course. The basic course, consisting of 6 credit hours, is usually taken during the first two years of college. No military obligation is incurred by enrolling in the basic course.

The advanced course, usually taken during the junior and senior years or during graduate school, involves 19 credit hours of study and a five-week Leadership Development and Assessment Course during the summer. Advanced course students incur a military obligation, and they receive up to \$500.00 per month in tax-free subsistence throughout the academic year.

Army ROTC is not itself a major. Participants pursue the degree of their choice and take Army ROTC as an elective program. Those who complete the program may receive federal commissions from the President of the United States.

Army ROTC offers a military science minor. For the military science minor, the student must complete the core curriculum of 19 hours and 5 from Army ROTC electives offered from within the Department of Military Science.

The core curriculum is:

ARMY 3010, 3020, 3030, 4010,
4020, HIST 2020

One course from each of the following categories:

ARMY 1020 or 3011
ARMY 3025 or 3026
ARMY 4015, 4016, 4025, or 4026

The military science minor, encompassing 24 credit hours, will prepare selected students for commissioning and establish a sound basis for their future professional development.

To be eligible for a commission, U. S. citizens must meet prescribed physical, intellectual, and moral standards in addition to completing Army ROTC studies and successful completion of

Professional Military Education (PME) courses. These PME courses include written communication skills, military history and computer literacy. A two-year option is available for sophomore and junior students, students with prior military service (see below), and those completing a masters program.

In the Army ROTC classroom the student is exposed to a wide variety of subjects designed to instill confidence, self-discipline, integrity and responsibility. Students gain an appreciation for the role of national defense, and learn what a leader must be, know and do in order to gain the respect and support of their subordinates.

Skills learned in Army ROTC, including resource management, leadership and planning are valuable and complement any university major. Young commissioned officers returning to civilian sectors after military service find an abundance of career opportunities.

Uniforms, Pay and Allowances

All uniforms, books and other instructional materials required in Army ROTC are provided to basic and advance course students at no cost. The cadet uniform is the same as the U.S. Army uniform except for the distinctive ROTC insignia.

Advanced course participants are paid a tax-free subsistence allowance of up to \$500.00 per month during the school year. During the summer training period students receive pay, travel, rations, quarters, clothing, and medical and dental services.

Two Year ROTC Program

The two-year program is designed for community college graduates and university students of sophomore or junior standing who did not take Army ROTC during the first two years of school. The program may also apply to seniors and graduates who have at least two years remaining in post graduate study.

To enter the two-year program, students must first attend a paid 28-day internship during the summer or be a veteran who has graduated from advanced individual training.

Special Scholarship Program

Two-, three-, and four-year scholarships are offered by Army ROTC. These scholarships pay full tuition, laboratory fees and a \$1200 per year book fee. While on scholarship, the student receives up to \$500.00 a month during the school year. In addition to active duty scholarships, Army ROTC offers scholarships to students wishing to join the U.S. Army Reserve or Army National Guard upon commissioning. These reserve scholarships also pay full tuition, laboratory fees, book fees, and up to \$500.00 a month.

Graduate students and undergraduate students are eligible to apply for the two- and three-year scholarships. These scholarships are awarded by the Professor of Military Science. Students do not have to be enrolled in ROTC to apply for these scholarships. Certain restrictions apply. High school juniors and seniors seeking a four-year scholarship should contact the Professor of Military Science, Army ROTC, Dept. 3167, 1000 E. University Ave., Laramie, WY 82071. College students desiring a scholarship should contact the Professor of Military Science in 147 Wyoming Hall, (307) 766-3390.

Scholarships are offered to ROTC cadets from several military associations. The Reserve Officers Association (ROA), Association of the U.S. Army (AUSA), Cowboy Battalion Alumni Association (CBAA), the United Services Automobile Association (USAA) and First Command offer annual cash awards to ROTC cadets.

Room and board scholarships are available to students who enroll in Army ROTC. Scholarship awards are based on merit and the student's potential to become a commissioned officer. The number of scholarships and dollar amount vary dependent on funds available. Room and board/room scholarships may only be used in UW residence halls or university apartments.

Leadership Laboratory

Leadership laboratory provides instruction that complements the classroom. This time provides practical application on subject matter taught in class. Leadership and management dynamics are inherent in this practical application. All students enrolled in a military science course must enroll in the appropriate leadership laboratory unless consent is obtained from the Professor of Military Science. Training includes land navigation, first aid, communications, basic rifle marksmanship, drill and ceremonies, decision making, squad movement and problem solving. This instruction is cadet planned and presented with immediate instructor feedback. The goals of this period are to instill self-confidence, self-discipline and responsibility in each cadet.

Land navigation skills are practiced in a variety of terrain locations near campus. The training instills trust and confidence in the cadet's ability to accurately plot and follow a compass course. Communication, such as radio, telephone and interpersonal skills, are taught and practiced. Marksmanship is taught in the Half-Acre rifle range and on other ranges, weather permitting. Finally, drill and ceremonies teaches methods of organizing and moving groups of individuals in an orderly manner resulting in team building while establishing esprit de corps.

Veterans' Option

Veterans of active military service and members of the National Guard or U.S. Army Reserve may qualify to go directly into the advanced Army ROTC program if they will be an academic junior.

In these cases, basic training fulfills the requirement of the first two years of ROTC (Basic Course). Academic freshmen and sophomores are not required to take basic course classes but are highly encouraged to do so. It is common for members of the National Guard to study to become commissioned officers via the ROTC program. The Simultaneous Membership Program (SMP) is a formalized program for advanced course Guard members and Reservists to combine their unit training with ROTC training. In many cases the SMP program will result in increased financial benefit to the individual.

Military Obligation

There is no military obligation for taking the basic course, freshman and sophomore years. When an individual starts the advanced course, he or she incurs an obligation. The nature of that obligation depends upon whether the individual elects to serve in the National Guard, the Army Reserve or the active Army, and whether the individual has an Army scholarship. Those who desire guard or reserve duty may contract specifically for that purpose. The guard and reserve obligation is eight years of monthly training meetings and two years of inactive ready reserve (IRR). The active duty obligation is four years Active duty, and four years of inactive ready reserve (IRR).

Extracurricular Activities

Army ROTC offers a variety of activities which are designed to promote an interest in the military and provide relaxing, enjoyable leisure activities for cadets.

The Cowboy Battalion has its own Ranger Challenge team, which is a varsity-level team that competes with other universities in military skills such as orienteering and soldier skills. The battalion also has a cannon crew, mounted color guard, 10-miler team, Bataan Death March team, and participates in intramural sports.

The department periodically sponsors other activities such as rappelling demonstrations, ranger weekends, battlefield tours, leadership exercises and other adventure training, such as mountaineering, land navigation exercises, patrolling and wilderness survival.

Suggested Course Sequence

FRESHMAN YEAR: Fall		Hrs.
ARMY	1010	1
Lab (mandatory).....		0
PEAC	1272 (voluntary).....	1/2
PEAC	1001	1
ARMY	3060 (voluntary)	1
FRESHMAN YEAR: Spring		Hrs.
ARMY	1020.....	1
Lab (mandatory).....		0
PEAC	1272 (voluntary).....	1/2

SOPHOMORE YEAR: Fall		Hrs.
ARMY	2010.....	2
Lab (mandatory).....		0
PEAC	1272 (voluntary).....	1/2
ARMY	2060 (voluntary)	2
ARMY	3070 (voluntary).....	2

SOPHOMORE YEAR: Spring		Hrs.
ARMY	2020	2
Lab	(mandatory).....	0
PEAC	1272 (voluntary).....	1/2
HIST	2020 (mandatory)	3

JUNIOR YEAR: Fall		Hrs.
ARMY	3010.....	3
Lab	(mandatory).....	0
PEAC	1272 (mandatory)	1/2
ARMY	3025 (mandatory).....	1
ARMY	3070 (voluntary).....	2

JUNIOR YEAR: Spring		Hrs.
ARMY	3020	3
Lab	(mandatory).....	0
PEAC	1272 (mandatory)	1/2
ARMY	3026 (mandatory).....	1

SENIOR YEAR: Fall		Hrs.
ARMY	4010.....	2
Lab	(mandatory).....	0
PEAC	1272 (mandatory)	1/2
ARMY	3030 (voluntary).....	3
ARMY	4025 (mandatory).....	1
ARMY	4015 (mandatory)	1
ARMY	4050 (voluntary).....	2
ARMY	3070 (voluntary).....	2

SENIOR YEAR: Spring		Hrs.
ARMY	4020	2
Lab	(mandatory).....	0
PEAC	1272 (mandatory)	1/2
ARMY	4026 (mandatory).....	1
ARMY	4016 (mandatory)	1

Military Science (ARMY)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M3♦Q1]).

1000. Dynamics of Leadership I. 1. [F1♦(none)] Introduces UW, university life and U.S. Army. Instills awareness of the role that Army ROTC plays in developing leaders. Provides students with skills and strategies that enable them to make successful transitions to university life.

1010. Dynamics of Leadership I. 1. Encompasses dynamics of leadership applicable to all careers through instruction in Rifle Marksmanship; Land Navigation; Leadership Laboratory; Field Training Exercises; U.S. Army Customs, Courtesies and Career Opportunities and various leadership dimensions.

1012. Rifle Marksmanship. 1. Introduces fundamentals of rifle marksmanship. Focuses on weapon function, proper firing techniques, steady hold factors, and safety; in class instruction and weapons firing, with the emphasis on hands on training.

1020. Dynamics of Leadership II. 1. Second semester of a one-year series. Continues ARMY 1010.

2010 [2030]. Leadership Skills and Management. 2. Studies principles and theories of leadership and team dynamics. Develops student leadership potential through the study of the values and attributes of effective leaders. Students gain self-confidence through the application of principles and techniques of leadership in a military environment. *Prerequisite:* ARMY 1010, 1020 or consent of instructor.

2020 [2040]. Leadership Skills and Small Unit Management. 2. Studies principles in small-unit management, tactics, operations and leadership. Develops students' self-confidence in their leadership ability through progressive application of knowledge, decision making, communication and control. *Prerequisite:* ARMY 2010 or consent of instructor.

2050. Internship: Leader's Training Course. 3. A four week leadership practicum which orients students to U.S. Army, trains them in basic military skills, develops and evaluates their officer leadership potential, and qualifies them for enrollment in the ROTC Advanced Course Program. Increases confidence, self-discipline and decisiveness through physical and academic challenges. *Prerequisite:* sophomore standing or above.

2060. Competent and Confident Leadership. 2. Interdisciplinary course whose aim is to encourage assessment of our obligations, commitments, and roles in society by inquiring into the nature of leadership and the responsibilities of both leaders and followers. Examines leadership traits that transcend the military aspect of leadership. *Prerequisites:* none.

3010. Leadership and Tactics I. 3. Studies leadership techniques and tactical operations at the small-unit level. Instruction covers the decision-making process, troop leading procedures, land navigation and operation orders. In-depth analysis of team/squad tactical procedures and techniques. Numerous student oral presentations and practical exercises. *Prerequisites:* ARMY 2010, 2020, basic camp or consent of department head.

3011. Pistol Marksmanship 1. Introduces fundamentals of pistol marksmanship. Focuses on shooting safety, weapon function, proper grip techniques, proper aiming techniques, steady holds, firing positions, proper trigger squeeze, breathing techniques, sight alignment; with an emphasis on shooting drills.

3020. Leadership and Tactics II. 3. Studies platoon-level tactics and leadership techniques. Instruction covers the solving of complex tactical problems. Illustrates techniques for properly managing personnel, resources and time to accomplish organizational goals. Introduces Army staff functions and prepares students for successful completion of ARMY 3030. *Prerequisite:* ARMY 3010.

3025. Conduct of Training. 1. Introduces the Army's system of conducting training exercises. Covers prerequisite training, pre-execution checks, officer/NCO responsibilities, training presentation techniques, sustainment training and training assessment. *Prerequisite:* consent of instructor.

3026. Assessment of Training. 1. Introduces the Army's system of training assessment. Covers formal and informal after-action reviews (AARs); preparation for, conduct of, and goals of an AAR; and writing of Army after-action reports. *Prerequisite:* consent of instructor.

3030. Practicum in Leadership. 3. Encompasses Leadership Development and Assessment Course, a five week test of the cadet's leadership ability. Each cadet is evaluated in ten different positions. Positions include both garrison and tactical situations. Each position requires the cadet to plan, implement and execute a wide variety of tasks. The cadet must control all personnel under this command. The cadet is extensively evaluated by cadre Tactical Officer/Non-commissioned Officer on twelve leadership dimensions. Successful completion of the Leadership Development and Assessment course is required for commissioning. *Prerequisites:* successful completion of ARMY 3010 and 3020.

3050. Army ROTC Nurse Summer Training Program. 3. Allows Army ROTC nursing cadets to obtain college credit for nursing experience gained in an army hospital during nurse summer training program. Students practice military skills, leadership, clinical nursing, administrative and interpersonal skills. *Prerequisites:* ARMY 3010, 3020.

3060. Military Skills Practicum: Ranger Challenge. 1-4 (Max. 4). Encompasses training and intercollegiate competition in fundamental military skills. Students learn and compete in areas of physical conditioning training, land navigation, rifle marksmanship, rope bridging and other skills practiced during small-unit military operations. *Prerequisite:* consent of department or instructor.

3070. Cadet Professional Development Practicum. 2. Consists of attendance as an Army ROTC cadet at an Army specialty producing school including Airborne, Air Assault, Northern Warfare School or Mountain Warfare School. Offered for S/U grade only. *Prerequisites:* ARMY 1010, 1020, 2010 and 2020 and/or consent of department head.

4010 [4030]. Dynamics of the Military Organization I. 2. Studies and analyzes organization, resources and functions of military

staff. Reviews formal staff problem-solving procedures, including student effective writing and briefing presentations. Introduces ethics and the military profession. *Prerequisites:* ARMY 3010, 3020 or consent of department head.

4015. Staff Officer Practicum I. 1. Gives students practical experience in serving on an Army staff. Under supervision of an Army ROTC cadre member, students undergo training and conduct practical exercises in one of the following specialties: command and control, operations, personnel or logistics. *Prerequisite:* concurrent enrollment in ARMY 4010.

4016. Staff Officer Practicum II. 1. Gives students experience in serving on an Army staff. Under the supervision of an Army ROTC Cadre member, students undergo training and conduct practical exercises in one of the following specialties: command and control, operations, personnel or logistics. *Prerequisite:* concurrent enrollment in ARMY 4020.

4020 [4040]. Dynamics of the Military Organization II. 2. Introduces military law; planning and management of personal affairs; Army transportation, logistics and personnel management systems. Studies officer/NCO relations. Includes student writing and briefing presentations on assigned topics. *Prerequisite:* ARMY 4010 or consent of department head.

4025. Principles of Training Management. 1. Introduces students to the Army's system of training management. Covers principles and philosophy of training, training guidance, training cycles, soldiers/leader tasks, techniques for collective and multi-echelon training, as well as procedures for short-term planning. *Prerequisite:* consent of instructor.

4026. Preparation of Training. 1. Introduces the Army's system of training preparation. Covers short-range training plans, training meetings, development of timelines, publishing of training schedules, training and evaluation outlines, as well as rehearsals. *Prerequisite:* consent of instructor.

4050. Management Internship: Cadet Troop Leadership Training. 2. Conducted at an active Army installation. Students (under supervision) assume duties of and function as a junior commissioned officer for three-week period. Written evaluation of student's performance is returned. Offered for S/U grade only. *Prerequisites:* ARMY 3010, 3020 and consent of department head.

4975. Military Science Independent Study. 1 (Max. 2). A continuation of ARMY 4010 and 4020. Projects and events are set at the discretion of the professor and subject to change. *Prerequisites:* ARMY 4010 and 4020.

Air Force ROTC

Department of Aerospace Studies
110 Wyoming Hall, 766-2338
FAX: (307) 766-2357
Web site: www.uwyo.edu/airrotc

Professors:

MICHAEL J. NUTTER, Lt. Colonel, U.S. Air Force; B.S. USAF Academy 1987; M.S. Wright State University 1994; M.S. Air University 2002; Professor of Aerospace Studies 2007.

Assistant Professors:

DONALD A. JACK, Major, U.S. Air Force; B.S. Park College 1996; Assistant Professor of Aerospace Studies 2007.

JEREMY A. SPARKS, Captain, U.S. Air Force; B.A. University of Arkansas-Monticello 2001; Assistant Professor of Aerospace Studies 2007.

The Air Force Reserve Officers Training Corps (AFROTC) commissions, through a college campus program, career-oriented Second Lieutenants in response to Air Force active duty requirements.

The Department of the Air Force supervises the detachment on campus. Uniforms, AFROTC books, and the necessary Air Force equipment are furnished by the government. All university students, both male and female, are eligible to apply for admission into the program.

Air Force ROTC offers and Aerospace Studies minor. For the Aerospace Studies minor, the student must complete the core AFROTC program plus: 1) 3 credit hours in any Management (MGT) course in the current UW catalog and 3 credit hours in one Political Science (POLS) course listed below, or 2) 6 credit hours of Political Science courses listed below.

POLS 1200, 2200, 2290, 2300, 2310, 3220, 3270, 3300, 4230, 4240, 4250, 4290, 4300, 4330, 4340

The 24 credit hours required to accomplish the Aerospace Studies minor will effectively compliment many majors, provide a sound basis for future professional development, and increase the career opportunities of a UW graduate.

Four-Year Program

The four-year program is divided into two phases. The first two years comprise the General Military Course (GMC) consisting of one class period (1 hour) per week in the classroom and one class period (2 hours) per week in leadership laboratory. The GMC is a prerequisite for continuation in the Professional Officer Course (POC), the last two years in the program. Other prerequisites include passing the Air Force Officer Qualifying Test (AFOQT), maintaining at least a minimum grade point average required by the university, having the physical qualifications for an Air Force commission, and participating in a four-week field training session. The advanced

course consists of one class period (3 hours) per week in the classroom and one class period (2 hours) per week in leadership laboratory.

Three-Year Program

Students may enroll in ROTC on a three or three and one-half year program where the GMC component is shorter. To complete the GMC requirements, the student must simultaneously enroll in AIR 1000 and AIR 2000 courses to complete all four academic terms of the GMC program or they can single enroll and then attend a six-week Field Training Program. The extra two weeks of Field Training duplicate the remaining academic content of the GMC program. After successfully completing the GMC program and Field Training, students may enter the two-year POC program. This program is especially suitable for sophomores and junior college transfers. Students that participated in high school Junior ROTC, or have prior-enlisted service, can apply documented participation toward a portion of the GMC requirement.

Two-Year Program

Students with prior, honorable military service or that completed the GMC program at another school and transferred to UW may complete AFROTC on a two or two and one-half year program. These students should contact the Unit Admissions Officer six months in advance of starting ROTC classes to complete the prerequisites, the admissions process, and compete for an enrollment allocation that is required to enter the POC. It is possible for students to pursue graduate studies and obtain a commission as long as the commission is attained by age 29 for students entering flight training or age 34 for non-flying students.

Leadership Laboratory

The concept of leadership laboratory is to provide leadership training experiences which will improve a cadet's ability to perform as a USAF officer. Leadership laboratory is largely cadet planned and directed.

Field Training Program

Field training is a four-week program conducted in residence at an Air Force base during the summer. A six-week field training program is required for cadets who have not completed all GMC academic requirements.

While at field training, each cadet is provided subsistence, uniforms/equipment, and receives approximately \$28.00/day plus reimbursement for travel to and from the field training base.

Financial Benefits

Freshmen and Sophomores on AFROTC scholarships receive \$300 and \$350, per month, respectively. Juniors enrolled in the Professional Officers Course receive \$450 per month and seniors \$500 per month tax-free during the school year for subsistence. Uniforms, required texts and all necessary Air Force equipment are furnished by the government. In addition, all POC and scholarship cadets are allowed to travel anywhere in the continental United States on military aircraft (on a space available basis).

Special Scholarship Program

Two-, three- and four-year scholarships are offered by AFROTC on a competitive basis. These scholarships pay for a \$900 book allowance per year, tuition (amount dependent on type of scholarship awarded), fees and other required expenses except room and board. The university offers room awards to students who receive Air Force Scholarships and reside in university housing. Furthermore, on a limited basis, the State of Wyoming also offers room awards to Air Force ROTC cadets (who have or have not been awarded an Air Force ROTC scholarship) and reside in university housing. High School seniors seeking a four-year scholarship should contact their high school counselors or the Unit Admissions Officer, AFROTC Detachment 940, Dept. 3005, 1000 E. University Avenue, Laramie, WY 82071; telephone (307)766-3710; email at airforce.rotc@uwyo.edu, early in the fall of their senior year. Sophomore or transfer students interested in competing for a scholarship should contact the Unit Admissions Officer before the fall semester prior to junior standing.

Military Obligation

Students enrolling in the first two years of the AFROTC Program (the General Military Course) are not obligated to military service of any kind, unless on an Air Force scholarship their sophomore year. Cadets accepting an AFROTC scholarship and those entering the Professional Officer Course become members of the inactive reserve of the United States Air Force. Upon being commissioned a Second Lieutenant in the Air Force, graduates in non-flying career fields agree to serve four years on active duty; pilot candidates agree to serve on active duty for 10 years after completion of flight training; navigator and air battle manager candidates agree to serve on active duty for six years after completion of their respective training.

Extracurricular Activities

To familiarize students with Air Force life and social customs, the AFROTC Program offers on a voluntary basis a wide range of extracurricular activities. Civil Air Patrol gives cadets an opportunity to experience flying first hand with a trained instructor pilot. The Arnold Air Society, a national professional honorary society,

is a service organization active on campus. The color guard supports various university and local activities. Visits to Air Force bases across the nation provide insight into the function of Air Force operational units. Throughout the year, AFROTC teams participate in the university intramural sports program, while cadet-sponsored social events build the spirit of comradeship inherent in military life.

Air Force (AIR)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M3↔Q1]).

1000. Leadership Laboratory. 0. The concept of leadership laboratory is to provide leadership training experiences which will improve a cadet's ability to perform as a USAF officer. Leadership laboratory is largely cadet planned and directed. All cadets must enroll in leadership laboratory. *Prerequisites:* none.

1010. Foundations of the U.S. Air Force I. 1-1/2. First semester of a one-year series. Introduces the U.S. Air Force and Air Force Reserve Officer Training Corps. Topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems and an introduction to communication skills. Leadership laboratory is mandatory for AFROTC cadets. *Prerequisites:* none.

1020. Foundations of the U.S. Air Force II. 1-1/2. Continues AIR 1010 and features such topics as Air Force core values, leadership, military communication skills, interpersonal communications, team building, diversity and harassment, and the Oath of Office. *Prerequisite:* AIR 1010 or consent of instructor.

2010. The Evolution of Air and Space Power I. 1-1/2. First semester of one-year series. Facilitates transition from AFROTC candidate to AFROTC cadet. Topics include early flight to WWI, interwar years and the development of air doctrine, the European Theater in WWII, the Pacific Theater in WWII, independent Air Force and the Cold War, the Berlin airlift, Korea, and nuclear deterrence. Leadership laboratory is mandatory for AFROTC cadets. *Prerequisites:* none.

2020. The Evolution of Air and Space Power II. 1-1/2. Second semester of one-year series. Continues AIR 2010 and features topics such as Vietnam, rebuilding for an air and space force, the Persian Gulf War, post-Cold War USAF operations, the former republic of Yugoslavia, and the Global War on terrorism. *Prerequisite:* AIR 2010 or consent of instructor.

3010 [4010]. Air Force Leadership I. 3. First semester of one-year series. Studies leadership and quality management fundamentals, professional knowledge, leadership, ethics and communication skills required of an Air Force officer.

Uses case studies to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. Mandatory leadership laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

3020 [4020]. Air Force Leadership II. 3. [(none)↔CS] Second semester of one-year series. Continues AIR 3010. *Prerequisite:* AIR 3010.

4010 [4050]. National Security Affairs and Preparation for Active Duty I. 3. [(none)↔G] First semester of one-year series. Examines the national security process, regional studies, leadership ethics and AF doctrine. Topics include the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, national security policy development, war and warfare, and current issues affecting military professionalism. Continued emphasis is given to communication skills. Leadership laboratory is required for all AFROTC cadets.

4020 [4060]. National Security Affairs and Preparation for Active Duty II. 3. Second semester of one-year series. Continues AIR 4010. *Prerequisite:* AIR 4010.

Bachelor of Applied Science

151 Agriculture Building

Awarded by the College of Agriculture
Phone: (307)766-4133 Fax: (307)766-4030
Web site: www.uwyo.edu/uwag

Organizations need leaders at all levels who can effectively understand the environment and society in which they operate; analyze situations and solve problems; supervise and manage; interact and communicate appropriately within and outside the organization; anticipate change; and plan for the future. The Bachelor of Applied Science degree (BAS) is designed for individuals who have completed an Associate of Applied Science degree at a Wyoming Community College (or an equivalent degree at another accredited institution) and who need or desire the additional breadth in skills, knowledge, and professional expertise to enhance their capabilities in their own careers and in the organizations in which they work.

The fundamental philosophy of the BAS degree is that the student must complete the general education requirements expected of all UW bachelor's degrees and must engage in upper-division coursework sufficient to provide focus and depth of learning. Following this philosophy, the BAS has **four basic components**. These components are **university studies, career specialty, professional concentration, and electives**. The fundamental elements of the baccalaureate degree are provided by the general education core (University Studies Program) and the upper division professional concentration.

The **University Studies Program (USP) Component** consists of a minimum of 30 credit hours as adopted by the UW faculty, and the Articulation Agreement between UW and the Wyoming Community Colleges (www.uwyo.edu/unst/Artic_agree_full.pdf). Students with an Associate of Applied Science degree from a Wyoming community college will normally matriculate with 15-20 hours of credit that count toward this component. The remainder may be acquired as part of the student's UW coursework, including the Professional Concentration or Electives coursework. With the adoption of some consistency across institutions in AAS general education credit requirements, fulfillment of the 30 credit USP Component combining Community College and UW credits can be formally articulated.

The **Career Specialty Component** is fulfilled with the Associate of Applied Science degree. This component will consist of a minimum of 40 credit hours in the major.

The **Professional Concentration Component** is the advanced component of the program and the courses are selected by the student and the adviser. The specifics may vary according to the student's program, community college, and UW major college. However, all students are required to take a range of courses from the prescribed set of areas of concentration within this component in order to provide them with the breadth and depth of learning necessary for a baccalaureate degree. This component will consist of 36-40 upper division or articulated equivalent credit hours.

The **Elective Component** will consist of the number of credit hours needed (after completing the other three components) to complete the degree requirements of the home college.

University of Wyoming Bachelor of Applied Science (BAS)

I. Requirements for a BAS Degree

1. Have been awarded the A.A.S. degree from a Wyoming community college or elsewhere and credits fulfill the Wyoming AAS General Education Core.
2. Two years of work experience.
3. Application and admission to the University of Wyoming completed.
4. Minimum number of credits needed for degree, by UW college: 120-128 total
5. Minimum of 48 credits must be taken in upper division courses, 30 of which must be from UW.
6. More than 70 hours may be transferred from a Wyoming community college or elsewhere, but all University of Wyoming requirements must be met.
7. Required credits comprised of Components II through V below:

II. University Studies Program Component - 32 credits

Wyoming Community Colleges have defined an AAS Common General Education Core Curriculum of 16 credits, required for an AAS degree from a Wyoming community college that provides entry to the UW BAS degree. Completion of the BAS requires completion of the additional courses as indicated.

AAS Transferred Core

(UW USP 2003 equivalency indicated)

Written Communications (WA and WB)	6
Quantitative Reasoning at 1000 level or higher (QA)	3
US and Wyoming Constitutions (V).....	3
Cultural Context: (Arts/Sociology/Humanities/Communications/Diversity (C))	3
Physical Activity and Health (P)	1
Total	16

Additional USP Requirements for BAS degree

Upper Division Written Communications (WC) ENGL 4010**	3
Oral Communications (O) COJO 1010***	3
Quantitative Reasoning (QB) STAT 2050 or STAT 2070	3
Cultural Context: from upper division, may be embedded (CA, CH, CS, G, D).....	6
Science (S) LIFE 1002.....	4

** ENGL 4010 is included in Professional Concentration area 2
***The "O" requirement might be met at the AAS level, in order to accommodate an upper division WB course.

III. Career/AAS Specialty Component - 40-60 credits

An Associate of Applied Science degree awarded from a Wyoming community college, or other accredited institution, will satisfy the Career Specialty Component (check with the community college for selected AAS programs).

IV. Professional Concentration Component (illustrative) - 36-40 credits

Students satisfy this component by taking an array of largely upper-division courses distributed across a prescribed set of areas of concentration. In one possible scenario, the areas to be included are outlined below.

1. AGRI 3000: Discovering and Utilizing Ideas and Information - 3 credits

This is a 3-credit course that provides the framework for effective learning in this degree program. Learning in this area guides students to accessing, evaluating, and utilizing information and ideas; communicating information and ideas effectively and responsibly; civic engagement for individual, organizational and community problem-solving; and applying new skills, knowledge, and perspectives in a contemporary society. [USP: I, L]

2. Communicating in Writing and Speaking (2 courses) - 6 credits

All personal and professional interactions require effective communication, both in writing and in speaking. This area guides students towards the acquisition and utilization of these skills.

Selected from:

*COJO 3190 Cross-Cultural Communication [D]	3
Prereq: COJO 1040	
COJO 3010 Business and Professional Communication	3
Prereq: COJO 1010	
COJO 3520 Communication Technology and Society	3
Prereq: COJO 1040	
*ENGL 4010 Technical Writing in the Professions [WC] (Online).....	3

3. Analysis and Problem-Solving (1-2 courses) - 3-6 credits

Effective decision-making requires the ability to acquire, evaluate and utilize information and data. This area guides students into an examination of the tools and methods available and the interpretation and utilization of the results of such analyses.

Selected from:

STAT 3050 Statistical Methods – General	3
Prereq: STAT 2050 or 2070	
ENR 4500 Risk Analysis [QB].....	3
Prereq: Math 1000 or 1400, Intro to Statistics	
FCSC 3110 Personal Finance	3
Prereq: junior standing	
CE 3900 Engineering Economics	3
Prereq: junior standing	

4. Organizational Leadership (4 courses) - 12 credits

Individuals in leadership positions at levels require an understanding of organizational design, behavior, and change. This area guides students into an examination of organizational models; human and financial resource management; negotiation and conflict resolution; ethical practices; legal and regulatory issues; and public relations and marketing.

OPTION A: Community Development

AGEC 4450 Negotiation.....	3
Prereq: COJO 1010 and junior standing	
AGEC 4660 Community and Economic Development	3
Prereq: ECON 1020 or SOC 2090, junior standing	
AGEC 4710 Natural Resource Law & Policy	3
Prereq: AGEC 1020, ECON 1020 or equivalent and business or agricultural law	
FCSC 4117 Working w/ Nonprofits & Boards....	3
(Online) Prereq: senior standing and satisfactory completion of a WB course	
FCSC 4985 Seminar: Development in Community Leadership	2-3
POLS 4420 Seminar in Public Admin.	3
POLS 4710 Topics: Intro to the Non-Profit Sector	1-3
POLS 4710 Topics: Non-Profit Management & Leadership	1-3
POLS 4710 Topics: American Political Issues	1-3
POLS 4890 Seminar in Comparative Government and Politics.....	3
POLS 5060 American Intergovernmental Relations	3
PSYC 3150 Moral Development	3
Prereq: PSYC 1000	
SOC 4020 Sociology of Work	3
Prereq: SOC 1000, MGT 3210 or ECON 1010	

OPTION B: Managing Organizations

This area of emphasis guides students through an examination of how managers create value by understanding and developing employee and customer relationships. It consists of four existing courses that may be taken AFTER completing ACCT 1010 and ECON 1010, both of which are available from, and articulated with, the community colleges throughout Wyoming. The area of emphasis consists of the following additional courses:

*MGT 3210 Management and Organizations ...	3
(Online) Prereq: WA, QA	
*BADM 3210 Business Ethics.....	3
(Online) Prereq: WA, WB	
*MKT 3210 Introduction to Marketing	3
(Online) Prereq: WA, STAT 2050 or STAT 2070	
*MGT 4410 Human Resource Management	3
(Online) Prereq: MGT 3210	

NOTE: Students with this option may not take more than 30 hours (total) in business.

5. Contemporary Society (2 courses) - 6 credits

An understanding of social, cultural, economic, and environmental contexts is essential for effective leadership and the management of change. This area guides students into an exploration of the diversity and complexity of issues and interactions – from the local to the global.

Selected from:

* AS 3105 From Gilgamesh to the Bomb	3
(Online) [I]	
* ANTH 3500 Gender and Society	3
[WB] Prereq: WMST 1080 or SOC 1000	
*COJO 3160 Theory of Language & Society	3
[WC] Prereq: COJO 1030 and 6 hrs in dept.	
* HIST 4490 Modern America, 1960-present	3
Prereq: HIST 1211 and 1221	
* HIST 4545 Multicultural West	3
(Online) Prereq: any history or social science course	
* HIST 4340 History of American Women	3
(Online) Prereq: ENGL/WMST/SOC 1080, HIST 1211, 1221	
* PHYS 4690 Science: Fact, Fiction, Future	3
[CH, WC]	
ENR 3000 Approaches to Environmental and Natural Resources Problem-Solving.....	3
[CS, WB] Prereq: QA	
CHST 3800 Chicanos in Contemporary Society	3
[CS, D] Prereq: CHST 1100 or SOC/WMST 1080	

6. Career Electives - 9 credits

These courses and experiences help the student apply their learning in a workplace and community environment.

V. Elective Component - 22-30 credits

Hours needed to complete degree requirements will be selected by the student, in conjunction with the UW academic adviser, to meet the unique employment and career goals of the student.

* Indicates course already offered through the Outreach School.

Earth System Science Program

Robert D. Kelly, Director
6072 Engineering Building

Phone: (307)766-4955 FAX: (307)766-2635

Web site: www.uwyo.edu/ESS

Earth System Science (ESS) is an interdisciplinary, science-oriented, undergraduate program focusing on the interactions between the various components composing the Earth system: the biosphere, geosphere, lithosphere, hydrosphere, atmosphere, and anthrosphere. Students earning a BS degree in ESS are required to declare a Concentration in one of the participating programs, which include Anthropology, Atmospheric Science, Biology, Botany, Geography, Geology and Geophysics, Secondary Education, and Soil Science. This list will expand as the program grows. ESS is administered under a committee of Deans, and the program Departments reside in the Colleges of Agriculture, Arts and Sciences, Education, and Engineering. The program is currently administered in Atmospheric Science.

ESS was designed to be rigorous enough to prepare individual students for graduate studies in their chosen Concentration. The Core courses also provide informal and formal opportunities for students to communicate with those in other concentrations. Students are asked to approach both the ESS office and program faculty in their respective Concentration for advising. A library of various printed ESS resources is maintained in the program office. Seminars and field trips addressing various aspects of the Earth system are organized and announced by the program office.

ESS Major

The ESS curriculum includes four areas. First, the ESS Core consists of five courses (16 credit hours), including academic credit for a required internship. Second, it requires Foundation courses (37-39 credit hours) in math, physics, chemistry, geographic information systems, remote sensing, and biogeochemistry. Third, courses are required by the Concentration (up to 50 hours). And fourth, many USP requirements are met by Core, Foundation, and Concentration courses, but others are required. The Secondary Education degree, "Earth Sciences Education" (ESSE), requires the ESS Core and many of the Foundation and USP courses, in addition to those from Education and most of the ESS Concentrations.

The required Core courses start with ESS/GEOL 2000, introducing the physical Earth system. This is followed by ESS/GEOL 3480, which brings human activities into the network. Next, the Earth system is studied in more detail, with modeling used for understanding, predictions, and experiments, in ESS/ATSC/BOT/GEOL 4001. Academic credit for ESS 4970 is earned with the required internship, which is overseen

and approved by a faculty committee, and usually occurs between the junior and senior years. And, finally, a senior-level capstone course, ESS 4950, emphasizes formal literature surveys and hands-on research addressing interdisciplinary questions about the Earth system.

The required courses are set for each Concentration, and may be obtained from the program office or the ESS office.

The Foundation courses are listed in the Table below, divided by topic area and with choices for some classes.

LIFE	1000	.....	4
LIFE	2021 or	.....	4
LIFE	2022 or	.....	4
LIFE	2023	.....	4
CHEM	1020 or 1050	.....	4
CHEM	1030 or 1060	.....	4
MATH	2200	.....	4
MATH	2205	.....	4
PHYS	1310	.....	4

Geographic Information Systems

(Choose one of the following):

GEOL	4200	.....	4
ANTH	4160	.....	3

Remote Sensing

(choose one of the following):

BOT/GEOL/GEOL	4111	.....	3
BOT/GEOL	3150	.....	3
ATSC	4033	.....	3

Biogeochemistry

(choose one of the following):

BOT	4780	.....	4
CHEM	3610	.....	4
GEOL	3500	.....	4
GEOL	4777	.....	3
SOIL	4535	.....	3

Earth System Science (ESS)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

1000. Wyoming in the Earth System. 2.

[(none)↔I, L] Introduces prospective Science majors to the interdisciplinary study of Earth's atmosphere, biosphere, hydrosphere and lithosphere. Focus on regional topics, such as the influence of energy development on water resources. Students learn about the methods Earth system scientists use to generate knowledge, access and use data. In addition to library skills, spatial information including remote sensing and geographic information systems is introduced. *Prerequisites:* none.

2000. Geochemical Cycles and the Earth System. 4. [(none)↔SE]

Introduces the Earth system, including the solid Earth, hydrosphere, biosphere and atmosphere. Emphasizes the evolution of the Earth, rock associations and geochemical cycles. Cross listed with GEOL 2000. *Prerequisites:* a 1000-level GEOL course with a lab and concurrent enrollment in CHEM 1020. (Normally offered fall semester)

3480. Environmental Change. 3.

[(none)↔G, WB] Examines changes in the bio-physical environments and landscapes of Earth during its habitation by humans. Emphasizes integrated approaches to understanding environmental changes based on climatological, ecological, geological, archeological, and historical evidence. Explores how humans have modified Earth's environments and how societies have responded to natural and anthropogenic environmental change. Cross listed with GEOG 3480. *Prerequisites:* GEOG 1010 or any USP S, SB, SE or SP course; any WA course. (P)

4001. Modeling the Earth System. 4.

Takes a modeling approach to demonstrate how the Earth is integrated into an interconnected system through exchanges of energy and matter, and how Earth system functioning is susceptible to human alteration. Unifying concepts focus on quantitative interactions between the Earth and the Sun, and between the Earth's lithosphere, hydrosphere, biosphere and atmosphere. Cross listed with ATSC/BOT/GEOL 4001. *Prerequisites:* MATH 2205 or equivalent and [ESS 2000 or GEOL 2000].

4950. Exploring the Earth System. 3.

[(none)↔WC] Conduct interdisciplinary research on a problem addressing physical, biological, and human components of the Earth System. With several written reports, students will critically review existing literature, define a research question, collect and analyze data, and present their results in a recognized journal format. *Prerequisites:* ESS 2000, ESS 3480, ESS 4001.

4970. Internship in Earth System Science. 2.

Academic credit for internship required of all ESS majors. The work is usually off-campus with government or industry, but may involve research with UW faculty member. Requires a written proposal and written report, both reviewed and approved by the ESS Steering Committee. *Prerequisite:* ESS 4001.

Graduate School

106 Knight Hall

Phone: (307)766-2287 FAX: (307)766-2374

Don Roth, Dean

Web site: www.uwyo.edu/uwgrad

The University of Wyoming provides opportunities for graduate study in the colleges of Agriculture, Arts and Sciences, Business, Education, Engineering and Applied Science, and Health Sciences. A master's degree is offered in almost every department within the colleges. In addition, a doctorate may be earned in agronomy, adult and post secondary education, animal science, anthropology, atmospheric science, botany, chemical engineering, chemistry, civil engineering, computer science, counselor education and supervision, economics, ecology, curriculum and instruction, distance education, educational leadership, electrical engineering, entomology, geology, geophysics, instructional technology, mathematics, mechanical engineering, molecular and cellular life sciences, molecular biology, neuroscience, petroleum engineering, physics, psychology, rangeland ecology and watershed management, reproductive biology, soil science, special education, statistics, zoology and physiology.

Programs of study and research lead to the following degrees:

Master of Arts (M.A.)
Master of Business Administration (M.B.A.)
Master of Science (M.S.)
Master of Music (performance) (M.M.)
Master of Music Education (M.M.Ed.)
Master of Planning (M.P.)
Master of Public Administration (M.P.A.)
Master of Social Work (MSW)
Master of Arts in Teaching (M.A.T.)
Master of Science in Teaching (M.S.T.)
Master of Fine Arts (M.F.A.)
Interdisciplinary Master of Arts
Interdisciplinary Master of Science
Educational Specialist (Ed.S.)
(under review)
Doctor of Education (Ed.D.)
Doctor of Philosophy (Ph.D.)

For specific information on programs and program updates, visit the individual departments' Web sites.

For information regarding the application process for graduate studies, please refer to page XX of this *Bulletin*.

Assistantships, fellowships, and scholarships are available to qualified graduate students. Stipends and the value of accompanying fee reductions awarded, as well as student health insurance coverage, vary with the hours of assistance required. Applications for assistantships or fellowships may be obtained from the graduate coordinator of the department in which a student plans to work or the Graduate School Web site. Information regarding graduate level scholarships may be obtained from the Graduate School Web site as well.

Helga Otto Haub School of Environment and Natural Resources

Ingrid Burke, Director
212 Wyoming Hall

Phone: (307)766-5080 FAX: (30)766-5099
Web site: www.uwyo.edu/ENR/enrschool.asp

The Helga Otto Haub School of Environment and Natural Resources encourages students to explore contemporary natural resource issues with an interdisciplinary approach that relies on science, economics, sociology, history, ethics, and more. The Haub School is connected to the William D. Ruckelshaus Institute of Environment and Natural Resources, which specializes in research and outreach on collaborative approaches to environmental and natural resource challenges, and to the Wyoming Conservation Corps.

Haub School students are drawn from a variety of academic disciplines and represent a spectrum of interests and training. The Haub School offers two options for undergraduates, including a double major and a minor.

The Haub School offers a full curriculum of courses tailored for students at all college levels. A freshman-level course, ENR 1100, provides a survey of major environmental and natural resource problems and attendant policies from the local to global scales. ENR 2000, a sophomore-level course, introduces students to the human dimensions of ENR problems through a text-based approach to understanding gender, environmental justice, and other cultural issues from the local to global scales. Students then complete a capstone series, including ENR 4000 and ENR 4900, in which they work in interdisciplinary teams to consider the environmental, social, economic, and other impacts associated with a current environmental and natural resource challenge. Unless given permission to do otherwise, students must complete ENR 4000 and ENR 4900 in the fall and spring, respectively, of the same academic year. Students taking ENR 4900 choose between a regional and international section and students in the international section may travel abroad with the class to learn about the issue in place. ENR 3900 is a seminar series that allows students to explore a particular ENR topic in depth. In Risk Analysis, ENR 4500, students learn to quantify and understand scientific uncertainty and its role in ENR challenges.

ENR Major

The ENR major is completed in tandem with a second affiliated major in any other discipline. ENR majors are required to complete 14 hours in core ENR courses including ENR 2000, ENR 3900, ENR 4000, ENR 4500, ENR 4900, and ENR 4970; an additional two hours minimum, must be completed in other ENR courses or additional units of ENR 3900 or 4970. ENR 4970 is an internship course in which students gain hands-on experience in an ENR field. In addition to the 16 hours of ENR courses offered by the Haub School, majors also take ENR-relevant distribution courses in six other fields including humanities, statistics, environmental science and

natural resource management, biological science, physical science, and social science. A minimum of three hours is required in each of these distribution categories and only one class may be drawn from the student's affiliated department. An approved list of ENR courses is available from the Haub School. E-mail senr@uwyo.edu to receive a copy of the distribution menus.

ENR Minor

Like the major, an ENR minor may augment any discipline in which students choose to major. The ENR minor does not require an internship or the full breadth of distribution requirements, but students are required to take 16 credit hours of coursework including ENR 2000, ENR 3900, ENR 4000, ENR 4500, ENR 4900, and an Environmental Science and Natural Resource Management course.

Learning Outcomes for ENR Students

The primary goal of the ENR major and minor is to add a breadth of understanding in ENR issues to the depth of knowledge the student gains in a traditional discipline (the student's affiliated major). ENR faculty, staff, and students have identified six major learning outcomes around which the curriculum is structured. These include:

1. Broad familiarity with current ENR issues at scales ranging from local to global.
2. Depth of knowledge about several current ENR issues, including a sophisticated understanding of positive and negative trade-offs in ENR decision-making.
3. An appreciation of the interdisciplinary nature of ENR issues, including an understanding of the basic theories and approaches of ENR disciplines including those in social sciences, humanities, environmental science and natural resource management, statistics, biological sciences, and physical sciences.
4. Knowledge of environmental laws and policies including the content, historical context, and ramifications of major ENR policies such as the National Environmental Policy Act, Clean Air Act, Endangered Species Act and others.
5. Understanding of current decision-making processes and their historical context, especially collaborative processes and adaptive management.
6. Development of professional skills, especially refinement of written and oral communication skills, development of critical thinking and analytical skills, leadership and ability to work as a professional in a team environment.

Environment and Natural Resources (ENR)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M3♦Q1]).

1100. Environment and Natural Resource Problems and Policies. 2. [(none)♦I, L] Survey of environmental and natural resources issues and policies at local/regional, national, and global scales. Students are challenged to think critically as they dissect the causes, complexities, and solutions of contemporary, interdisciplinary environmental and natural resource challenges. *Prerequisites:* none.

2000. Environment and Society. 3. [W2, C2, G1♦G] Develops understanding of the nature and dimensions of environmental and natural resource issues. Explores ways in which elements of society approach, evaluate, and develop positions relative to environmental issues. Uses case studies to illustrate the contemporary and historical role of individuals and societies in identifying and addressing environmental issues at scales ranging from local to global.

3700. Wyoming Conservation Corps Practicum. 1-2. Required for students entering the WCC. Students will be required to make weekly journal entries and write a paper on a topic germane to their WCC experience. Additionally, necessary training for the Wyoming Conservation Corps program will be included in the course content. *Prerequisites:* Acceptance into the Wyoming Conservation Corps program.

3900. Seminar in Environment and Natural Resources. 1-3 (Max. 3). Examines research and policy perspectives by a variety of authorities on selected environment and natural resource problems and issues. *Prerequisite:* ENR 3000.

4000. [3000] Approaches to Environmental and Natural Resource Problem-Solving. 3. [M3♦CS, WB] Explores important environmental policy, collaborative and adaptive decision-making, and the integration of diverse disciplines in the study and resolution of complex ENR challenges. This is the first course in the ENR Capstone series (along with ENR 4900) and students should take both capstone courses in the same academic year. *Prerequisite:* WA.

4051. Environmental Politics. 3. [C2, W3♦WC] Analyzes environmentalism as a political phenomenon. Provides students with a basic understanding of how to analyze political issues by: (1) examining the historical and contemporary issues that produce controversy over environmental matters; and (2) surveying the impacts of these issues on the formulation and implementation of laws, policies, and regulations. Cross listed with AMST, POLS, GEOG and REWM 4051. *Prerequisite:* POLS 1000.

4052. Federal Land Politics. 3. Examines the political forces that have shaped and continue to shape federal land policy and management. Explores the interactions between democratic decision making and science in the management of federal lands. Surveys the sources of controversy over federal land management and methods for harmonizing public demands with technical expertise. Cross listed with POLS/AMST/GEOG/REWM 4052. *Prerequisite:* POLS 1000.

4500. Risk Analysis 3. [(none)↔QB] Introduces basic concepts of risk analysis, including risk perception, identification, assessment, communication, management, and policy. Provides quantitative treatment of risk assessment procedures, fundamental mathematical models, and the concepts of variability and uncertainty; and practical experience in risk analyses conducted by teams of students. Emphasizes environment and natural resource examples. Dual listed with ENR 5500. *Prerequisites:* MATH1000 or 1400, introductory statistics and familiarity with Excel spreadsheets.

4600. Campus Sustainability. 3. Uses campus as a setting to explore long-term environmental, economic, and social sustainability theory and practice. Students design and implement a semester-long project to improve sustainability of the UW campus. This interdisciplinary course is appropriate for students of all disciplines. Dual listed with ENR 5600. *Prerequisites:* junior or senior standing.

4900. Environmental and Natural Resource Assessment Practice. 3. [C2, W3↔WC] Encompasses student resolution in multidisciplinary teams of environmental and natural resource problems and issues; practice in formulating policy alternatives; case studies; planning, performing and coordinating multidisciplinary research. Dual listed with ENR 5900. *Prerequisites:* ENR 3000 and 3900.

4970. ENR Internship. 1-6.0 (Max. 6). Provides practical experience in environmental and natural resource policy, management and decision processes, as well as interaction with professionals in the field. Offered S/U only. *Prerequisites:* ENR 3000 and 3900.

4890 [4990]. Topics in Environment and Natural Resources. 1-6.0 (Max. 12). Special topics in environment and natural resources are offered under this number. The specific subject matter varies each year because the course is normally taught by faculty who wish to present a specialized topic of interest to ENR and other students. Check class schedule for specific topics offered each year. Dual listed with ENR 5890. *Prerequisites:* ENR 3000 or permission of the instructor.

Information Literacy

Coe Library 123
Phone: (307)766-3425

Jamie Kearley, Director

The University Libraries offer research assistance and information literacy instruction to students and faculty. Librarians provide customized class orientations to information sources in various disciplines, as well as individual research consultations. Students needing research help may call, email, instant message, or visit William Robertson Coe Library, or the Brinkerhoff Earth Resources Information Center.

The University of Wyoming addresses information competencies utilizing the framework of the Information Literacy Standards for Higher Education as approved by the Association of College & Research Libraries (ACRL) and endorsed by the American Association for Higher Education. Librarians collaborate with teaching faculty in addressing these information competencies in course assignments or lectures. Information literacy is the ability to recognize and define the need for information, then locate, evaluate, and use that information effectively and ethically.

University of Wyoming librarians have developed TIP: Tutorial for Info Power (<http://tip.uwyo.edu>) as a general introduction to information competencies. Students are required to work through the tutorial and pass the TIP quiz as part of the University Studies information literacy component. The TIP tutorial has been adapted for use at other institutions and has been recognized by the ACRL for inclusion in their Peer-Reviewed Instructional Materials Online database.

The Libraries also offer credit courses to help students improve research skills and to meet the information literacy requirement of the University Studies Program. Current offerings are restricted to upper-division students.

Learning Outcomes

We expect that students completing LBRY courses will become knowledgeable consumers of information through learning how to:

1. Recognize and define the need for information;
2. Efficiently locate information in the library or on the Internet;
3. Evaluate the quality of information;
4. Utilize information effectively, ethically, and legally.

Information Literacy (LBRY)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M2↔QB]).

3010. [(none)↔L] Research from a Distance. 1. Students locate, evaluate, and synthesize free and fee-based information resources used in academic and work environments, with a special focus on accessing information remotely. Course assignments are customized to student's academic major and career goals. Students discuss ethical and legal issues surrounding information use. *Prerequisites:* ENGL 1010 or equivalent, junior standing.

3020. Managing and Navigating the World of Information. 3. [(none)↔L] Prepares students to be knowledgeable consumer of information in our global, high-tech society. Skills taught will enable students to locate and manage information resources, preparing them for university level research and life after graduation. *Prerequisite:* USP WA course.

Intercollegiate Athletics

Fieldhouse North

Thomas K. Burman, Director

Phone: (307)766-2292 FAX: (307)766-5414

Web site: wyomingathletics.com

WILLIAM E. ATENCIO, Assistant Athletic Director - Facilities Operations 2006.

THOMAS K. BURMAN, B.S. University of Wyoming 1988; M.B.A. Robert Morris University 1991; Director of Intercollegiate Athletics 2006.

MARK P. BRANCH, B.S. Oklahoma State University 1997; Masters in Athletic Administration 1999; Head Wrestling Coach 2008.

CONRAD CHAVEZ, B.S. University of Wyoming 1997; Assistant Athletic Director for Academic Services 2004.

DAVID CHRISTENSEN, B.A. Western Michigan University 1985; M.S. Eastern Washington University 1988; Head Football Coach 2009.

HARRY KEENER FRY, B.S. Virginia Tech 1981; M.S. Marshall University 1993; Assistant Athletic Director - Cowboy Joe Club 2007.

KATALINGYULAI, B.S. University of Wyoming 2003; M.B.A. University of Louisiana-Lafayette 2007; Head Women's Tennis Coach 2008.

TRENT GREENER, B.S. University of Wyoming 1990; M.S. 2002; Director of Strength and Conditioning 2009.

BILL HAMILTON, B.S. Messiah College 1995; M.S. University of Tennessee 2000; Associate Athletic Director for Ticket Operations/Event Management 2005.

TIMOTHY J. HARKINS, B.S. University of Kansas 1984; M.S. University of Tulsa 1992; Associate Athletic Director Media/Public Relations 2007, 1991.

FLOYD JOSEPH JENSEN, B.S. University of Wyoming 1998; Head Men's Golf Coach 2002.

THOMAS JOHNSON, B.A. University of Wyoming 1986; Head Swimming Coach 1998.

JENNIFER LYNN KOST, B.S. University of Wyoming 2002; M.B.A. 2004; Assistant Athletic Director for Marketing and Promotions 2004.

JOSEPH J. LEGERSKI, JR., B.S. University of Wyoming 1979; Head Women's Basketball Coach 2003.

WILLIAM T. LYONS, B.S. University of Wyoming 1973; M.S. University of Arizona 1974; Curriculum Coordinator 1978.

KEVIN MCKINNEY, B.S. University of Wyoming 1971; Senior Associate Athletic Director for External Operations 1972.

MOLLY K. MOORE, B.S. Washington State University 1999; M.Ed. 2001; Associate Athletic Director for Internal Operations/SWA 2007.

JOSHUA REBHOLZ, B.S. Weber State University 2004; Associate Athletic Director Development 2007.

DANNY SANCHEZ, B.A. University of Connecticut 1991; Head Women's Soccer Coach 2007.

HEATH M. SCHROYER, B.A. Armstrong State University 1995; M.A. National University 1996; Head Men's Basketball Coach 2007.

BILL SPARKS, B.S. Marshall University 1979; M.S. University of Georgia 1993; Sr. Associate Athletic Director for Business Operations 1998.

JOSEY STENDER, B.S. University of Memphis 2001; M.S. 2004; Head Women's Golf Coach 2005.

MATTHEW J. WHISENANT, B.S. East Tennessee State University 1996; M.A. 1999; Senior Associate Athletic Director for Internal Relations 2002.

PHILLIP WILLE, B.A. Valpariso 2002; J.D. 2005; Assistant Athletic Director for Compliance/Olympic Sports 2005.

ROBERT T. WILLIAMS, B.S. Ohio State University 1982; M.E. University of Cincinnati 1984; Director of Sport Performance 2003.

DONALD W. YENTES, B.A. Judson College 1981; B.A. North Park College 1981; Head Track Coach 2000, 1998.

CARRIE YERTY, B.A. Washington State University 1991; M.A. University of Memphis 2004; Head Women's Volleyball Coach 2008.

Mission Statement

The mission of the University of Wyoming Department of Intercollegiate Athletics is to provide an environment in which student-athletes complete their undergraduate college education and achieve athletics success at the highest possible level. As Wyoming's only four-year University, we are committed to offering a first-class competitive athletics program at the NCAA Division IA level that promotes the values of the state and assists in carrying out the overall University of Wyoming mission.

Core Values

- We must maintain a proper balance between academics and athletics.
- We support the student-athlete as a whole person – academically, athletically, in career development, community service, and related to personal well being. We believe college athletics develops discipline, character, and teamwork; all necessary ingredients for individual leadership and achievement.
- Our student-athletes, coaches, and staff must uphold a sense of character, honesty, and integrity as they serve as University and state ambassadors on a local, regional, and national level.
- We believe we can achieve athletic success on a regional and national level. We must accomplish this without compromising any of our other core values.
- We believe long-term athletic success increases exposure for the University's academic and research mission and provides regional and national exposure for the state of Wyoming across the United States.

- We must operate in a fiscally sound manner. We strive to balance state, university, and self-generated resources to create a competitive and appropriate budget.
- We believe first-class facilities are an important part of our ability to compete at the highest level. We are committed to building and renovating the facilities necessary to be successful as well as maintaining the great facilities we already have.
- We are committed to recruiting Wyoming students prepared for Division IA competition.
- We are committed to being a positive campus partner. We will strive to strengthen and build relationships with students, faculty, administrators, and staff from other areas of campus.
- We are committed to being a positive city, county, and state partner. We strive to strengthen and build relationships with the Laramie City Council and the Laramie City operating departments, Albany County government, The Wyoming Legislature, and Wyoming state elected officials and state agencies.
- We believe in empowering individuals (student-athletes, coaches, and staff) to make decisions that will lead to their success. With that privilege comes responsibility and accountability.
- We are committed to excellence in customer service. Every UW alumnus, ticket holder, fan, or contributor must be treated with the utmost respect. We strive to communicate openly and honestly with every constituent.
- We will promote good sportsmanship in all athletic endeavors.
- We are committed to fair and equitable treatment of student-athletes and staff. We will maintain an environment that promotes gender equity and embraces diversity.
- Our work environment will be positive, enjoyable, and family friendly.

General Information

Men's athletic teams, referred to as the Cowboys, compete in eight intercollegiate sports, including basketball, cross country, football, golf, swimming, indoor track, outdoor track and wrestling.

Women's athletic teams, known as the Cowgirls, compete in nine intercollegiate sports, including: basketball, cross country, golf, soccer, swimming, tennis, indoor track, outdoor track and volleyball.

The University of Wyoming competes in the Mountain West Conference, along with traditional rivals U.S. Air Force Academy, Brigham Young University, Colorado State University, University of Nevada-Las Vegas, University of New Mexico, San Diego State University, Texas Christian University, and the University of Utah.

The University of Wyoming is a member of the National Collegiate Athletic Association, and its teams consistently compete in NCAA postseason championships for men and women.

The director of intercollegiate athletics shall be responsible to the president for the conduct of the university's intercollegiate athletic program, to include the staging of all intercollegiate athletic contests and for the enforcement of all applicable rules and regulations of associations governing the conduct of intercollegiate athletics.

The university's grant-in-aid, additional athletic scholarship policies, and eligibility requirements are in strict accordance with the operating codes of the Mountain West Conference and the bylaws of the NCAA.

University athletic facilities are comparable with others in the Rocky Mountain region and include the 15,000-seat Arena-Auditorium, 32,843-seat War Memorial Stadium, Memorial Fieldhouse, the Multi-Purpose Gym, the university's soccer stadium, tennis complex and top-flight practice areas, all on campus. The Rochelle Athletic Center (RAC) is the latest addition to the Wyoming Athletics complex, featuring a state-of-the-art weight room, sports medicine center, locker rooms, and academic center.

Eligibility of student-athletes for practice, competition, and financial aid is determined in accordance with applicable rules and policies of conference and national associations in which the university holds membership for purposes of fostering intercollegiate athletic competition. Student-athletes are certified to be eligible for a season of competition as of the beginning of the semester in which his or her sport season commences. Student-athletes eligible for full-time enrollment and who meet both NCAA satisfactory progress requirements and Mountain West Conference minimum cumulative grade point average requirements shall be certified eligible for intercollegiate competition. Eligibility for a season of competition may be terminated at any time a student-athlete demonstrates willful failure to regularly attend class or abandonment of assigned academic tasks.

National Outdoor Leadership School

Administered jointly by the Office of Academic Affairs and the Center for Advising and Career Services

222 Knight Hall

Jo Chytka, Director

Center for Advising and Career Services

Phone: (307)766-2398 FAX: (307)766-2089

Web site: www.uwyo.edu/cacs

The University of Wyoming (UW) and National Outdoor Leadership School (NOLS) Articulation Agreement provides the opportunity for degree seeking UW students to receive UW academic credit for NOLS courses.

When NOLS students step into the world's wild places, they bring not only their backpacks, but also more than 40 years of experience in expeditioning. NOLS founder Paul Petzoldt's idea was simple: take people into the wilderness for an extended period of time, teach them the right things, feed them well and when they walk out of the mountains, they will be skilled leaders. The core of his idea was the extended expedition, one of sufficient length that a person could learn and practice the skills over and over again. That is the backbone of every NOLS course and today the school is widely recognized as the world's leader in the extended expedition, from two weeks to twelve.

This articulation agreement covers domestic and international NOLS originated semester-long courses. This agreement will also cover some individual short-term courses (14-45 days; including mountaineering, rock climbing, sailing, kayaking, skiing, snowboarding, and backpacking) and the Wilderness First Responder course ("WFR")

Application: Students Enrolled at UW

Students who have completed at least one semester at UW or another accredited post-secondary institution, and are in good standing for academics and conduct prior to the proposed period of study, may apply to receive articulated NOLS credit.

All students interested in obtaining internship course credits must be advised by the appropriate UW unit prior to taking the NOLS semester course.

Students enrolled in the NOLS program may apply their financial aid to the cost of the program if they are enrolled as a full-time degree seeking student at the University of Wyoming.

Credit and Credit Transfer

UW credit hours will be awarded in the approved courses, which require prior UW academic department and college approval, upon completion of the NOLS courses, provided a grade equivalent to a UW grade of C or better was obtained at NOLS.

Students should be aware that for internship credits to be awarded, additional academic work requirements determined by the internship course home UW academic department will need to be met. Those additional requirements vary between academic programs and amount of credit desired, but may include a satisfactory evaluation from NOLS, a weekly journal, a substantial written report, and an oral presentation.

UW credit will not be awarded if the student withdraws or is expelled from the NOLS course.

Academic Advising

Prior to participating in a NOLS course for UW credit, students must contact the Director of the Center for Advising and Career Services, his/her designee, and the student's assigned advisor. These persons will approve the student's schedule, provide the appropriate course numbers, and liaise with the NOLS Registrar.

Students enrolling in NOLS semester long courses must register for a minimum of 12 UW credit hours for the participating semester.

UW students studying at NOLS will be bound by all rules, regulations and by-laws in operation at NOLS. In addition, since UW students remain enrolled as degree candidates at UW, they must also adhere to UW standards of conduct, rules and regulations. UW and NOLS both abide by the Federal Right to Privacy Act (FERPA).

Financial Arrangements

Each UW student will pay to NOLS:

- The NOLS tuition and related fees (any changes to be advised in writing by NOLS at least three months in advance of the change coming into effect), related fees would include equipment deposit;
- Complete medical and evacuation health insurance;
- Other fees (e.g. tuition protection program, local transportation, and gear purchases), air transportation and additional living expenses will be paid directly by the student to the provider of the service.

Each UW student will pay to the UW Outreach School

- The published per credit registration fees to register UW credits earned at NOLS

Students Not Previously Enrolled at UW

Students may also apply to receive articulated NOLS credit upon admission to the University of Wyoming. The student will be responsible for admissions and registration fees administered through UW Outreach School. Students must apply for NOLS credit the semester following completion of the NOLS course. Internship course credits will not be available.

Approved NOLS Semester Courses

Semester in the Rockies
Teton Valley Semester
Outdoor Educator Semester
Semester in the Southwest
Semester in the Sonoran
Semester in Patagonia
Semester in Baja
Summer Semester in Australia
Semester on the Borders
Semester in the Yukon
Semester in Alaska
Semester in Australia
Semester in New Zealand
Semester in the Pacific Northwest

NOLS Courses

Wind River Wilderness
Absoraka Backpacking
Wilderness Natural History
Wind River Mountaineering
Rock Climbing
Climbing at Red Rocks
Rock and River
Whitewater River Expeditions
Salmon Backpacking and Rafting
Owyhee Backpacking and Rafting
Snowboarding
Skiing
Pacific NW Backpacking
Himalaya Backpacking
Himalaya Mountaineering
Australia Backpacking and Sea Kayaking
Australia Backpacking
Patagonia Mountaineering
Baja Sea Kayaking
Baffin Island Backpacking and River
Yukon Outdoor Ed-Backpacking and River
Yukon Backpacking and River
Yukon Canoeing
Alaska Mountaineering
Denali Mountaineering
Alaska Outdoor Ed-Backpacking
and Sea Kayaking
Brooks Range Backpacking and River

School of Energy Resources

207 Bureau of Mines Building

Phone: (307)766-6879 FAX (307)766-6701

Mark A. Northam, Director

K.J. Reddy, Associate Director for Academics

Web site: www.uwyo.edu/ser

The School of Energy Resources facilitates interdisciplinary academic and research programs in engineering and science, economics, and environment and natural resources policy to address critical energy-related issues faced by our society.

Our mission is to leverage and add to the already significant energy-related talent and resources in the University of Wyoming colleges to develop human resources, know-how, and technical solutions to ensure a secure and sustainable energy future for the state, region, and nation.

Professors:

TIMOTHY J. CONSIDINE, B.A. Loyola University 1975; M.S. Purdue University 1977; Ph.D. Cornell University 1981; SER Professor of Energy Economics 2008.

CRAIG C. DOUGLAS, A.B. Chicago University 1977; M.S. Yale University 1978; M.Phil. 1980; Ph.D. 1982; SER Professor of Mathematics 2008.

SUBHASHIS MALLICK, B.Sc. Indian Institute of Technology 1976; M.Sc. 1978; Ph.D. University of Hawaii 1987; SER Professor of Geology & Geophysics 2008.

BRUCE A. PARKINSON, B.S. Iowa State University 1972; Ph.D. California Institute of Technology 1977; SER Professor of Chemistry 2008.

LUIS FELIPE PEREIRA, B.S. Federal University of Minas Gerais (Brazil), 1983; M.Sc. 1985; M.Sc. New York University Courant Institute, 1988; Ph.D. SUNY-Stony Brook University, 1992; SER Professor of Mathematics 2008.

KATTA J. REDDY, B.S. A.P. Agricultural University (India) 1978; M.S. 1980; Ph.D. Colorado State University 1986; Professor of Water Quality 2006, 2000; SER Associate Director for Academics, 2007.

Associate Professors:

MAOHONG FAN, B.S. Wuhan University of Science and Engineering, 1984; M.S. Beijing University of Science and Technology, 1992; Ph.D. Chinese Academy of Sciences, 1997; Ph.D. Iowa State University, 2000; Ph.D. Osaka University 2003; SER Associate Professor of Chemical Engineering 2008.

JOHN P. KASZUBA, B.S. Beloit College, 1982; M.S. Virginia Polytechnic Institute & State University 1986; Ph.D. Colorado School of Mines, 1997; SER Associate Professor Geology & Geophysics 2008.

GUAN QIN, B.S. Tsinghua University (China), 1984; M.E. China National Petroleum Corporation, 1987; Ph.D. University of Wyoming, 1995; SER Associate Professor of Chemical & Petroleum Engineering 2009.

Assistant Professors:

PO CHEN, B.S. Beijing University 2000; Ph.D. University of Southern California 2005; SER Assistant Professor of Geology and Geophysics 2008.

Bachelor of Science - Energy Resource Science

Energy and environment are integral to global communities and to society. The need for exploiting all forms of energy resources (fossil fuels, renewables, and alternatives) to meet growing energy demands while protecting the environment has become more urgent in recent years.

Society faces many difficult decisions regarding production and consumption of energy, and the consequent impacts on the global environment. Pressing questions include: To what extent should we exploit natural resources for energy production? Do we have sufficient energy resources to meet skyrocketing global demands for energy in the future? What must we do to develop sustainable energy programs and policies in light of the increasingly complex interactions of economic needs and environmental imperatives? The School of Energy Resources (SER) is facilitating development of interdisciplinary academic programs on campus to address these and other critical energy-related issues.

SER is collaborating with the Colleges of Arts and Sciences, Engineering and Applied Science, Agriculture, Business, Education, and Law, as well as the Haub School of Environment and Natural Resources, to offer an interdisciplinary B.S. degree program in Energy Resource Science (ERS). The goal of the ERS degree is to offer a diverse curriculum that combines engineering, science, business, law, and natural resources content to build a fundamental understanding of the interaction and tradeoffs between energy, environment, policy, and the economy.

Overall objectives of the ERS degree program include the following:

- Create an intellectual and practical energy resource degree program by providing theoretical knowledge in the classroom, experimental design in the laboratory, and hands-on experience in the field
- Provide interdisciplinary training for students to be consistent with the rigor expected of professionals in energy resources
- Prepare human resources for the energy industry, regulatory agencies, and educational and research institutes.

Required Academic Performance

In order to graduate with a Bachelor of Science degree in Energy Resource Science, the student must earn a letter grade of C or better in each course and a GPA of 2.0 or better.

Energy Resource Science Curriculum

Required Focus Courses

<i>Geology</i>	<i>Hrs.</i>
GEOL 1100.....	3
GEOL 2000.....	4
GEOL 2005.....	4
GEOL 3600.....	4
GEOL 3650.....	4
GEOL 4190.....	3
Total	23

<i>Engineering</i>	<i>Hrs.</i>
ES 1060.....	3
ES 2310.....	3
PETE 2050.....	3
PETE 3100.....	2
Total	11

<i>Economics and Policy</i>	<i>Hrs.</i>
ECON 1020.....	3
ECON 1200.....	3
Total	6

<i>Environment & Natural Resources</i>	<i>Hrs.</i>
CHE 4000.....	3
ENR 4500.....	3
ESS 1000.....	2
GEOG 3480.....	3
PHIL 2345.....	3
REWM 3100.....	3
REWM 4200.....	3
SOIL 3130.....	3
Total	23

<i>Computational Modeling</i>	<i>Hrs.</i>
BOT 4111.....	4
GEOG 4200.....	4
Total	8

<i>ERS Capstone</i>	<i>Hrs.</i>
ERS Capstone	3

Required Science & Math Courses

LIFE 1010.....	4
CHEM 1020.....	4
CHEM 1030.....	4
MATH 2200.....	4
MATH 2205.....	4
MATH 2210.....	4
PHYS 1210.....	4
STAT 2050.....	4
Total	32

Electives

Complete at least 9 hours from a department-approved list. At least 6 hours must be at the 3000-level or higher.

University Studies Program (USP)

ENGL 1010.....	3
COJO 1010.....	3
USP CA Elective	3
PEAC 1001.....	1
Total	10
Total Hours	125

University Honors Program

Duncan Harris, Director

102 Merica Hall

Phone: (307) 766-4110 FAX: (307)766-4298

Web site: uwyo.edu/honors

The University Honors Program provides academically ambitious students with a series of curricular and co-curricular opportunities. Through these opportunities, students gain the breadth of knowledge needed by citizens, professionals, and family members to be effective in many different pursuits. Honors students learn to write cogently for a variety of audiences and to become skilled in writing in their disciplines. They learn to locate and use reliable information and trustworthy opinion. Through appropriate coursework, they learn how to become engaged citizens and to understand the ethnic and cultural diversity of America and the world. They learn the purposes and values of the arts, humanities, and social sciences. The capstone senior honors project is a sustained research or creative activity through which students demonstrate what they have learned: to formulate a project independently, to develop the intellectual and creative means to complete it, and to write and speak effectively about their work.

Admission

Most students join the program prior to their freshman year. Freshman applicants meet at least one of the following criteria: a composite ACT score of 28, or a combined verbal and quantitative SAT score of 1240, or a high school GPA of 3.7.

The program also welcomes UW and transfer students up to the beginning of the junior year. To join, these students need an overall college GPA of 3.25.

Interested high school seniors and transfer students are encouraged to come by the Honors Program Office (Merica Hall 102) or to write to the Director, University Honors Program, Dept. 3413, 1000 University Ave, Laramie, WY 82071. The email address is honors@uwyo.edu.

Scholarships

At least twenty entering freshmen and transfer students will receive four-year scholarships in amounts ranging from \$1,000 to \$4,000. Other scholarships are awarded annually to honors students, including scholarships for off-campus study. Applications are due February 1st.

Program Requirements

Once enrolled, honors students take five innovative and intellectually challenging core courses. In the freshman year, students take the two-semester Freshman Honors Colloquium which introduces the history of western culture by studying classics from various times and their contexts. In the first semester, students can fulfill the freshman writing requirement by enrolling in HP 1020 (W1); freshmen who have already met the composition requirement take HP 1151. All freshman honors students then take HP 1161 in the spring. Thereafter, students enroll in one honors course each year: Non-Western Perspectives for sophomores; Modes of Understanding for juniors; and a Senior Honors Seminar. Each of these courses fulfills graduation requirements.

The capstone senior honors project assures that students gain research or creative experience in an area of their interest. These projects often lead to graduate studies or a special career path.

To continue in the program, students must maintain a cumulative grade point average of 3.25. Students whose GPA falls below 3.25 are placed on probation.

Successful completion of the program is indicated on transcripts and diplomas, and seniors are recognized at graduation ceremonies.

Honors courses are restricted to honors program students; exceptions must be approved by the Honors Program Office.

Honors Program (HP)

USP Codes are listed in brackets by the 1991 USP code followed by the 2003 USP code (e.g. [M3♦Q1]).

1000. Intellectual Communities. 1. [(none)♦I] Queries the nature, functions, and benefits of intellectual communities from the ancient world to present. Prerequisite: Concurrent enrollment in HP 1020, HP 1151 or HP 1161.

1020. Freshman Honors Colloquium I. 3. [W1♦WA, L] Composition course. Provides innovative writing instruction to honors students while introducing works and history of western culture. Particularly emphasizes analytical reading and writing. Prerequisite: participation in UW Honors Program. (Offered fall semester)

1151 [1150]. Freshman Honors Colloquium I. 3. [C1♦CH, L] Studies significant works in the history of Western civilization to the Renaissance, both in their historical context and in relation to one another. For entering freshmen who have already fulfilled the WA requirement. Prerequisite: participation in the UW Honors Program. (Offered fall semester)

1161 [1160]. Freshman Honors Colloquium II. 3. [C1♦CH] Continues HP 1020 and 1151. Prerequisite: participation in UW Honors Program. (Offered spring semester)

2151 [C1, G1♦ (none)], 2152 [C2, G1♦(none)], 2153 [C3, G1♦(none)] [2150]. Non-Western Perspectives. 3 (Max. 6). Explores issues central to human experience from perspectives of non-western peoples. Topics vary from year to year. Required of UW Honors Program students. Prerequisites: sophomore standing and participation in UW Honors Program.

3151 [C1♦ (none)], 3152 [C2♦ (none)], 3153 [C3♦(none)] [3150]. Modes of Understanding. 3 (Max. 6). Introduces study of nature and grounds of knowledge, its limits and validity. Examines epistemological basis of selected areas of academic thought. Topics vary from year to year. Required of UW Honors Program students. Prerequisites: junior standing and participation in UW Honors Program.

4151 [C1♦ (none)], 4152 [C2♦ (none)], 4153 [C3♦(none)] [4150]. Senior Honor Seminar. 3 (Max. 6). Asks students to confront a complex social issue, examine it from several perspectives and take a stance on some aspect of the issue. Topics vary from year to year. Required of UW Honors Program students. Prerequisites: senior standing and participation in UW Honors Program.

4975. Independent Study. 1-3 (Max. 6). Supervised study and investigation in topics related to students' research.

4990. Topics: ____ . 1-3 (Max. 6). Accommodates a senior seminar series or a course offering by visiting faculty whose subject matter is not included in other course offerings. (Offered based on sufficient demand and resources)

UWYO courses are designed to help students acculturate to college life and coursework and learn key academic skills. Course content is combined with training in critical reading, academic writing, research, formal presentation, and many other emphases. UWYO courses have low student-teacher ratios in an effort to help students experience richer connection with the instructor and students in the course. Most UWYO courses imbed intellectual self-awareness within the course goals. Several UWYO courses are part of UW learning communities and provide additional opportunities for students to engage with and work together in their cohort.

For more information on the Synergy program and courses, contact Jessica Willford at synergy@uwyo.edu. For more information on Student Success Services, contact Sandy Straley at (307) 766-6189; sstrale2@uwyo.edu.

1000. IC for Undeclared Students. 2.

[(none)◀▶I, L] An introduction to the intellectual community of the University of Wyoming, information literacy, and higher education in general, and is specifically intended for students who have not yet made a decision about their college major. Students will begin to develop the critical thinking skills that are necessary in higher education and to explore the primary intellectual activities of various disciplines. Cross listed with A&S 1000. *Prerequisites:* none.

1205. Student Success Services First Year Seminar. 1.

[(none)◀▶I, L] First year students enrolled in the Student Success Services project will learn how to utilize campus resources and understand, her/his interests and values and develop the ability to establish and work toward short-term and long-term career goals, apply personalized study strategies and interpret university, college, and departmental rules and regulations. *Prerequisite:* Freshman only (exclusively for students who are part of the SSS project).

1210. First Year Experience Seminar II.

1. Provides students opportunities to explore career options that match their personality profile; create goals to optimize their college years; understand the value of service learning in their college and professional careers, and recognize how awareness of self and others leads to success in college and their professional careers. *Prerequisite:* UWYO 1205.

1450. Critical Reflection in Intellectual Communities. 3.

[(none)◀▶I, L] Intellectual Community course for the Synergy learning community. Supports WA reading, research, and writing activities. Provides opportunities for students to read critically, conduct primary and secondary research, investigate diversity issues, develop computer literacy, and learn about the intellectual expectations of college life. Unaffiliated with a major department. *Prerequisites:* none.

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COWLES, JOHN R., Computer Science
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 DECHERT, CHRISTIANE,
 Communication Disorders
 DECKERT, JENNIFER, Theatre and Dance
 DELANEY, JAMES M., Law
 DELLENBACK, PAUL A.,
 Mechanical Engineering
 DeLOZIER, LAURA, Modern and
 Classical Languages
 DENNEY, COLLEEN, Women's Studies
 DENZER, ANTHONY S., Civil and
 Architectural Engineering
 DESHLER, TERRY, Atmospheric Science
 DILLON, MICHAEL, Zoology and Physiology
 DOAK, DANIEL, Zoology and Physiology
 DOLAN, CHARLES W., Civil and
 Architectural Engineering
 DOLENCE, E. KURT, Pharmacy
 DOMBROWSKI, JANET E., University Libraries
 DONAHUE, DEBRA L., Law
 DORST, JOHN D., American Studies
 DOUGLAS, CRAIG C., SER/Mathematics
 DOWNS, WILLIAM MISSOURI,
 Theatre and Dance
 DRIESE, KENNETH, Botany
 DRUMMOND, KENT G., Management
 and Marketing
 DU, MIN, Animal Science
 DUNCAN, HEATHER, Educational Leadership
 DUEKER, KENNETH G., Geology
 and Geophysics
 DUFF, MICHAEL, Law
 DUTTA, DEBASHIS, Chemistry
 EDGAR, THOMAS V., Civil and
 Architectural Engineering
 EGGLESTON, CARRICK M.,
 Geology and Geophysics
 ELLBOGEN, MARTIN JR., Family Practice
 ELLSWORTH, JUDITH Z., Elementary/
 Early Childhood Education
 EMASHOWSKI, MARY, Pharmacy
 ESTES, DAVID, Psychology
 ETTEMA, ROB, Civil and
 Architectural Engineering
 EWERS, BRENT E., Botany
 EWIG, RICHARD G., American Heritage Center
 FADIAL, JOHN M., JR., Music
 FAN, MAOHONG, Chemical and
 Petroleum Engineering
 FARRELL, MARY M., University Libraries
 FAY, DAVID, Molecular Biology
 FEIGUIN, ADRIAN E., Physics
 FELDMAN, STEPHEN M., Law
 FERRE-PIKAL, EVA S., Electrical
 and Computer Engineering
 FERRELL, MARK, Plant Sciences
 FINNOFF, DAVID C., Economics and Finance
 FLANIGAN-SKINNER, MARGARET,
 Zoology and Physiology
 FLEISCHMAN, GARY M., Accounting
 FLESHER, PAUL V.M., Religious Studies
 FLYNN, FRANCIS W., Zoology and Physiology
- FORD, STEPHEN P., Animal Science
 FOULKE, THOMAS, Agriculture
 and Applied Economics
 FOX, JONATHAN, Veterinary Sciences
 FRANC, GARY D., Plant Sciences
 FRENG, ADRIENNE B., Criminal Justice
 FRENG, SCOTT, Psychology
 FRICK, CARL, Mechanical Engineering
 FROST, B. RONALD, Geology and Geophysics
 FROST, CAROL D., Geology and Geophysics
 FRYE, SUSAN C., English; Women's Studies
 FURTADO, FREDERICO da
 CUNHA, Mathematics
 FUZESEY, ZOLTAN M., Zoology
 and Physiology
 GABRIELSON, TEENA J., Political
 Science, Women's Studies
 GAMBOA, RUBEN, Computer Science
 GALEY, FRANCIS D., Veterinary Sciences
 GALLAGHER, JOSEPH, Army ROTC
 GANTENBEIN, REX E., Medical
 Education and Public Health
 GARCIA, JENNY, University Libraries
 GARCIA, TERESA, Communication Disorders
 GARNER, ANDREW, Political Science
 GARNER, MARGARET, English
 GARNETT, RODNEY, Music
 GARNICH, MARK R., Mechanical Engineering
 GARRISON, JEAN A., International
 Studies, Political Science
 GEEERTS, BART, Atmospheric Science
 GELB, HARVEY, Law
 GEORGE, GINA M., University Libraries
 GERN, WILLIAM, Zoology and Physiology
 GEROW, KENNETH, Statistics
 GILCHRIST, EILEEN, Communication
 and Journalism
 GINTING, VICTOR, Mathematics
 GLADNEY, GEORGE A., Communication
 and Journalism
 GODBY, ROBERT W., Economics and Finance
 GOLDENSTEIN, CHERYL, University Libraries
 GOMELSKY, MARK, Molecular Biology
 GOODIN, SUSANNA L., Philosophy;
 Women's Studies
 GOODSON, PATRICIA A., Chemistry
 GOUAL, LAMIA, Chemical and
 Petroleum Engineering
 GRANDJEAN, BURKE D., WYSAC,
 Sociology; Statistics
 GRAY, MATTHEW J., Psychology
 GRIBB, WILLIAM J., American Indian
 Studies; American Studies; Geography
 GRIESMAIER, FRANZ-PETER, Philosophy
 GRIFFITH, MICHAEL, Music
 GROOSE, ROBIN W., Plant Sciences
 GRUBBS, LEA, Social Work
 GUIDRY, GAVIN, Army ROTC
 GUNDERSON, JAMES E.,
 Economics and Finance
 GUZZO, ANNE, Music
 HAEFNER, JOHN, Kinesiology and Health
 HAGY, ALYSON, English
 HALL JR., ROBERT O., Zoology and Physiology
 HAMANN, JERRY C., Electrical and
 Computer Engineering
 HAMEL, PATRICIA, Chicano Studies;
 Modern and Classical Languages
 HAMERLINCK, JEFFREY, Geography
 HAMILTON, JERE', Civil and
 Architectural Engineering
- HAMPE, GARY D., Sociology
 HANSCOM, MARTHA J., University Libraries
 HANSEN, ANDREW C., Mechanical Engineering
 HARDIN-JONES, MARY,
 Communication Disorders
 HARDY, LEAH, Art
 HARKIN, MICHAEL E., American Indian
 Studies; Anthropology; American Studies
 HARLOW, HENRY J., Zoology and Physiology
 HARLOW, MARY ANN, University Libraries
 HARRIS, DUNCAN S., English, Honors Program
 HARRIS, H. GORDON, Chemical and
 Petroleum Engineering
 HART, ANN MARIE, Nursing
 HARTMAN, RONALD L., Botany
 HARTUNG, CYNTHIA M., Psychology
 HATHAWAY, BRENT A., Management
 and Marketing
 HAYDON, MARGARET, Art
 HEANEY, APRIL, English
 HECK, CARY, Criminal Justice
 HEDGES, KEITH E., Civil and
 Architectural Engineering
 HEINZ, STEFAN, Mathematics
 HELD, LARRY J., Agricultural and
 Applied Economics
 HELLER, PAUL L., Geology and Geophysics
 HENNE, ADAM, Anthropology,
 International Studies
 HENNING, MARY, University Libraries
 HENSEL, LARRY L., Music
 HERBERT, STEPHEN K., Plant Sciences
 HERMANSEN-KOBULNICKY,
 CAROL, Pharmacy
 HERT, TAMSEN L., University Libraries
 HESCO, PAUL E., Army ROTC
 HESS, BRET W., Animal Science
 HEWLETT, JOHN, Agriculture
 and Applied Economics
 HILAIRE, MICHELLE L., Pharmacy
 HILD, ANN L., Renewable Resources
 HILL, ROBIN, Elbogen CTL
 HILLIKER, REBECCA, Theatre and Dance
 HIND, EMILY, Modern and Classical Languages
 HITCHCOCK, JOHN M., Computer Science
 HIX, HARVEY, English
 HIXON, DOUGLAS L., Animal Science
 HOBART, SYLVIA A., Mathematics
 HOBERG, JOHN O., Chemistry
 HODGSON, LEE, Theatre and Dance
 HOLBROOK, W. STEVEN, Geology
 and Geophysics
 HOLLAND, JEANNE E., American Indian
 Studies; English; Women's Studies
 HOLMES, MALCOLM D., Sociology
 HOLT, ANDREW, Accounting
 HOLT, PHILIP, Modern and Classical Languages
 HORN, STEVEN W., Animal Science
 HORNECKER, JAMIE R., Pharmacy
 HOWARD, GEORGE, Agriculture
 HOWELL, ROBERT R., Geology and Geophysics
 HOYLE, TENA, Kinesiology and Health
 HSU, CHIA FANG, Communication
 and Journalism
 HUBBELL, LARRY, Political Science
 HUBERT, WAYNE A., Zoology and Physiology
 HULIN, BRYAN K., Army ROTC
 HUMPHREY, NEIL F., Geology and Geophysics
 HUNHOFF, DEAN M., Army ROTC
 HUNT, DAVID M., Management and Marketing
 HUNT, ELIZABETH, Art

- HUNTER, MELISSA, Pharmacy
 HUSSAIN, M. DELWAR, Pharmacy
 HUTCHISON, LINDA, Secondary Education
 HUZURBAZAR, SNEHALATA V.,
 Statistics; Women's Studies
 IAMS, HELEN, Family Practice
 INNES, PAMELA J., Anthropology;
 American Indian Studies
 IPINA, LYNNE, Mathematics
 ISAACS, BRANDON, Family Practice
 ISAAK, DALE D., Molecular Biology
 ISLAM, ANOWARUL, Plant Sciences
 JACK, DONALD A., Aerospace Studies
 JACKSON, JOHN H., Management
 and Marketing
 JACKSON, LAWRENCE, Theatre and Dance
 JACKSON, STEPHEN T., Botany
 JACOBS, JAMES J., Agricultural
 and Applied Economics
 JAEHNIG, KENTON G., American
 Heritage Center
 JAFARI, FARHAD, Mathematics
 JAIME, ANGELA, Educational Studies
 JANAK, EDWARD, Educational Studies
 JANUS, THORSTEN M., Economics and Finance
 JARMAN, MICHELLE, Wyoming INstitute for
 Disabilities (WIND), Women's Studies
 JARVIS, DONALD L., Molecular Biology
 JENKINS, JAYNE M., Kinesiology and Health
 JOHN, BARBARA E., Geology and Geophysics
 JOHNSON, ERIC A., Law
 JOHNSON, LINDY, Dean's Office,
 Engineering and Applied Science
 JOHNSON, PATRICK, Chemical and
 Petroleum Engineering
 JOHNSON, PAUL E., Physics and Astronomy
 JOHNSON, RAYMOND B., Family Practice
 JOHNSON, TRICIA GIOVACCO, Elementary/
 Early Childhood Education
 JONES, DAVID L., Communication Disorders
 JUN, SUKKY, Mechanical Engineering
 JUNNA, MOHAN REDDY, Civil and
 Architectural Engineering
 KAMBUTU, JOHN, Educational Studies
 KAMP, MARIANNE R., History;
 International Studies; Religious
 Studies; Women's Studies
 KASZUBA, JOHN P., SER/Geology
 and Geophysics
 KAUFFMAN, MATTHEW, Zoology
 and Physiology
 KEBLIS, MATTHEW F., Management
 and Marketing
 KEARLEY, JAMIE, University Libraries
 KEARLEY, TIMOTHY G., Law
 KEARNS, CASEY, Theatre and Dance
 KEEFAUVER, LINDA W., Educational Studies
 KEENEY, COLIN, English
 KELLENERS, THIJS, Renewable Resources
 KELLEY, ROBERT O., Medical
 Education and Public Health
 KELLY, ROBERT D., Atmospheric Science
 KELLY, ROBERT L., Anthropology
 KEMPSON, DIANE A., Social
 Work; Women's Studies
 KERR, GREG, Civil and Architectural
 Engineering
 KIDWELL, LINDA A., Accounting
 KIDWELL, ROLAND E., Management
 and Marketing
 KILANDER, GINNY, American Heritage Center
 KILGORE, KERRI VANDEL, Pharmacy
 KIKUT, PATRICK, Art
 KIM, QUEE-YOUNG, Sociology
 KING, JAMES D., Political Science
 KLAGES, RICKI, Art
 KLEINSASSER, AUDREY M.,
 Educational Studies
 KNIEVEL, MICHAEL, English
 KNIGHT, MARSHA F., Theatre and Dance
 KNISS, ANDREW, Plant Sciences
 KNOBLOCH, FRIEDA E., American
 Studies; Women's Studies
 KOBBE, RYAN, Dean's Office, Engineering
 and Applied Science
 KOBULNICKY, HENRY A., Physics
 and Astronomy
 KORFANTA, NICOLE, Environment
 and Natural Resources
 KORNFELD, MARCEL, Anthropology
 KOURIS, DEMITRIS A., Mechanical Engineering
 KRAFCZIK, JOSEPH, Modern and
 Classical Languages
 KRALL, JAMES M., Plant Sciences
 KRIST, AMY, Zoology and Physiology
 KRUEGER, JANELLE L., Pharmacy
 KRUEGER, KEM, Pharmacy
 KRUGER, DAVID, University Libraries
 KSAIBATI, KHALED, Civil and
 Architectural Engineering
 KUBELKA, JAN, Chemistry
 KUBICHEK, ROBERT F., Electrical
 and Computer Engineering
 KVENILD, CASSANDRA, University Libraries
 LAKE, SCOTT, L., Animal Science
 LAMARTINE, NICOLE C., Music
 LAMBERT, SERENA, Counselor Education
 LANE, ANNE MARIE, American
 Heritage Center
 LANGE, KAREN S., University Libraries
 LANGER, PAMELA J., Molecular Biology
 LARSEN, KEVIN S., Modern and Classical
 Languages; Religious Studies
 LARSEN, PAMALA D., Nursing
 LARSON, MARY LOU, Anthropology
 LARSON-MEYER, D. ENETTE, Family
 and Consumer Sciences
 LATCHININSKY, ALEXANDRE V.,
 Renewable Resources
 LAUENROTH, WILLIAM, Botany
 LAUGHLIN, MARGARET C., Elementary/
 Early Childhood Education
 LAWSON-BORDERS, GRACIE, African
 American Studies, Communication
 and Journalism, Women's Studies
 LEAS, JAMES G., Army ROTC
 LEATH, JANIS H., University Libraries
 LEE, LONG, Mathematics
 LEEDY, GAIL, Social Work
 LEGG, DAVID E., Renewable Resources
 LEGOWSKI, STANISLAW F., Electrical
 and Computer Engineering
 LEHMANN, TERESA, Chemistry
 LEWIS, RANDOLPH V., Molecular Biology
 LI, JI, Pharmacy
 LIBERLES, DAVID, Molecular Biology
 LIEBMAN, MICHAEL, Family and
 Consumer Sciences
 LINDSTROM, GRANT L., Management
 and Marketing
 LOCKE, STEVEN, Elementary/
 Early Childhood Education
 LOCKWOOD, JEFFREY A., Philosophy
 LOFFREDA, BETH, English; American Studies
 LOVVORN, JAMES R., Zoology and Physiology
 LUDDEN, PAUL A., Animal Science
 LYNG, GREGORY, Mathematics
 LYFORD, MARK, Life Sciences, Botany
 LYONS, WILLIAM T., Kinesiology and Health
 MACHALEK, RICHARD S., Sociology
 MACLEAN JR., WILLIAM E., Psychology
 MAHVAN, TRACY D., Pharmacy
 MALLICK, SUBHASHIS, SER/
 Geology and Geophysics
 MALM, RONALD L., Family Practice
 MANYAK, PATRICK, Elementary/
 Early Childhood Education
 MARKS, CLIFFORD J., English
 MARTIN, LINDA G., Pharmacy
 MARTINEZ del RIO, CARLOS,
 Zoology and Physiology
 MARTINSEN, RANDI, Geology and Geophysics
 MASON, CHARLES F., Economics and Finance
 MAVRIPLIS, DIMITRI J.,
 Mechanical Engineering
 MAYER, JENNIFER, University Libraries
 MAYES, ROBERT, Secondary Education; Science
 and Mathematics Teaching Center
 McCARTHY, ROBERT, Educational Leadership
 McCLEAN, TERRY, Botany
 McCLURG, PATRICIA A., Education
 McCORMICK, RICHARD J., Animal Science
 McCracken-Flesher, CAROLINE,
 English; Religious Studies
 McCREA, SEAN M., Psychology
 McDONALD, DAVID B., Zoology and Physiology
 McGINITY, RICHARD C., Management
 and Marketing
 McGRIFF, DEBORAH, Counselor Education
 McINROY, JOHN E., Electrical and
 Computer Engineering
 McKAY, SUSAN R., Women's Studies
 McKEAGE, KATHLEEN, Music
 McKIBBIN, CHRISTINE L., Psychology
 McLEOD, DON, Agricultural and
 Applied Economics
 MEANS, JEFFREY D., History,
 American Indian Studies
 MEANS, WARRIE J., Animal Science
 MEDINA-JEREZ, WILLIAM J.,
 Secondary Education
 MEGRI, AHMED C., Civil and
 Architectural Engineering
 MEHN, MARK P., Chemistry
 MELLIZO-CUADRADO, CARLOS, Modern
 and Classical Languages, Philosophy
 MENDELSON, ADAM, Theatre and Dance
 MENKHAUS, DALE J., Agricultural
 and Applied Economics
 MESBAH, ABDELOUHAB, Plant Sciences
 MESSENGER, DAVID, History;
 International Studies
 MEYER, SONYA S., Family and
 Consumer Sciences
 MICHALEK, RUDI, Physics and Astronomy
 MILLAR, FRANK E., Communication
 and Journalism
 MILLER, HOLLY, Nursing
 MILLER, KURT W., Molecular Biology
 MILLER, MICHAEL, Family Practice

- MILLER, SCOTT N., Renewable Resources
MILLER, STEPHEN D., Plant Sciences
MILLER, STEVEN L., Botany
MILLS, KENNETH W., Veterinary Sciences
MINCKLEY, TOM, Botany
MITCHELL, JAMES, Management and Marketing
MOFFETT, MARC A., Philosophy
MOLDENHAUER, SUSAN, Art Museum
MONTAGUE, DEREK C., Atmospheric Science
MONTGOMERY, DONALD L., Veterinary Sciences
MOORHOUSE, G. ERIC, Mathematics
MORAN, PETER WILLIAM, Elementary/Early Childhood Education
MORGAN, KARI, Family and Consumer Sciences
MORGAN, MICHAEL M., Counselor Education
MORROW, NORMAN R., Chemical and Petroleum Engineering
MOSS, GARY E., Animal Science
MUKAI, DAVID J., Civil and Architectural Engineering
MUKNAHALIPATNA, SURESH S., Electrical and Computer Engineering
MÜLLER, SIGUNA, Mathematics
MUNDT, HANNELORE, Modern and Classical Languages; Women's Studies
MUNN, LARRY C., Renewable Resources
MUÑOZ, ED A., Criminal Justice; Chicano Studies
MUNOZ, PAULA, University Libraries
MURDOCH, WILLIAM J., Animal Science
MURDOCK, MARGARET M., Criminal Justice; Political Science
MURDOCK, VICTORIA, Social Work
MURPHY, MELISSA, Anthropology
MURPHY-PARKER, DANA, Nursing
MYERS, JAMES D., Geology and Geophysics
NAIR, SREEJAYAN, Pharmacy
NAUGHTON, JONATHAN W., Mechanical Engineering
NASREDINE, FRED, Army ROTC
NEEMANN, HAROLD P., Modern and Classical Languages
NELSON, BURRELL, Botany
NELSON, A. CHRISTIE, Pharmacy
NELSON, MICHAEL L., University Libraries
NEWELL, PATRICK, Theatre and Dance, Centennial Singers
NEWELL, QUINCY D., Religious Studies, Women's Studies
NGANGA, LYDIAH, Elementary/Early Childhood Education
NICHOLAS, CHRISTOPHER, Music
NORRIS, SHELLY, English
NORTHROP, KATE, English
NORTON, JAY, Renewable Resources
NUNEZ, NARINA L., Criminal Justice; Psychology
NUTTER, MICHAEL J., Aerospace Studies
NYE, ERIC W., English; Religious Studies
OAKLEAF, JAMES, Geography, WYGISC
O'BRIEN, JOHN F., Electrical and Computer Engineering
O'HAGAN, JOHN, Theatre and Dance
O'TOOLE, DONALD, Veterinary Sciences
OGDEN, FRED L., Civil and Architectural Engineering
OGLE, KIONA, Botany, Statistics
OLSON, RICHARD A., Renewable Resources
ONETO, STEPHANIE A., Management and Marketing
ONTKO, ALLYN, Pharmacy; Chemistry
ORIGER, MATTHEW, Army ROTC
PAGE, JAMES, Family Practice
PAGE, KAREN L., Management and Marketing
PAIGE, VIRGINIA B., Renewable Resources
PAISLEY, STEVEN I., Animal Science
PANNING, CHAD L., Pharmacy
PANTER, KAREN, Plant Sciences
PARISH, THOMAS R., Atmospheric Science
PARK, GI-HYEON, Civil and Architectural Engineering
PARKER, SYLVIA, Science and Mathematics Teaching Center
PARKINSON, BRUCE A., Chemistry
PARKINSON, DEBRA, Elementary and Early Childhood Education
PARKINSON, JERRY R., Law
PARKS, DOUGLAS S., Family Practice
PAROLIN, PETER, English
PATTON, TRACEY OWENS, African American Studies; Communication and Journalism; Women's Studies
PAULSON, DEBORAH D., Geography
PECK, ANN, Mechanical Engineering
PECK, DANNELE, Agricultural and Applied Economics
PENDALL, ELISE, Botany
PENNINGROTH, SUZANNA L., Psychology
PEPPER, CAROLYN M., Psychology
PEREIRA, LUIS FELIPE, SER/Mathematics
PERSICHTTE, KAY, Educational Studies
PERSON, DEBORA, Law
PERSON, MARK, Modern and Classical Languages
PETERSEN, NANCY SUE, Molecular Biology
PETERSON, NORMAN K., Adult Learning and Technology
PETERSON, C. MARK, Management and Marketing
PETRIE, JENNIFER L., Pharmacy
PHILLIPS, LORI J., University Libraries
PHILLIPS, OWEN R., Economics and Finance
PICHERIT, HERVE G., Modern and Classical Languages
PICKETT, BRENT, Political Science
PIERCE, MICHAEL, Physics and Astronomy
PIERRE, JOHN W., Electrical and Computer Engineering
PIKAL, JON M., Electrical and Computer Engineering
PIRI, MOHAMMAD, Chemical and Petroleum Engineering
PLUMB, OVID A., Mechanical Engineering
PLUMB, TAWNYA, Law
POLSON, DONALD, Civil and Architectural Engineering
POLYAKOV, PETER, Mathematics
POYER, LIN A., Anthropology
PRESS, MELEA, Management and Marketing
PRETZ, CHRISTOPHER, Statistics
PREWETT, JONATHAN, Mathematics
PRAGER, STEVEN D., Geography
PRICE, CINDY J., Communication and Journalism
PRIDGEN, MARY D., Law
PRIMUS, MICHAEL A., Communication Disorders
PRZYGOCKI, JAMES, Music
PUCKETT, JAY A., Civil and Architectural Engineering
PURTZER, MARY ANNE, Nursing
QIN, GUAN, Chemical and Petroleum Engineering
QUACKENBUSH, NICOLE, English
RADOSZ, MACIEJ, Chemical and Petroleum Engineering
RASHFORD, BENJAMIN, Agricultural and Applied Economics
RAHEL, FRANK J., Zoology and Physiology
RAISBECK, MERL F., Veterinary Sciences
REDDY, KATTA J., Renewable Resources
REHER, CHARLES A., Anthropology
REINERS, WILLIAM, Botany
REN, JUN, Pharmacy
REVERAND II, CEDRIC D., English
REYNOLDS, CARL L., Secondary Education
RHOADES, DUANE, Modern and Classical Languages
RICHARDSON, BRUCE, English
RIEBE, CLIFFORD, Geology and Geophysics
RIOS, FRANCISCO, Educational Studies
RITCHIE, MARK, Art
RITTEN, JOHN, Agriculture and Applied Economics
RITTENBURG, TERRI L., Management and Marketing
ROBERTS, AMY, Elementary/Early Childhood Education
ROBERTS, PHILIP J., American Studies; History
ROBERTS, REBECCA, Communication and Journalism
ROBINSON, TIMOTHY J., Statistics
ROBITAILLE, BETH, Family Practice
RODDICK, DEAN M., Chemistry
RODGERS, J. DANIEL, Renewable Resources
RODI, ALFRED R., Atmospheric Science
ROMERO, ALAN, Law
ROMTVEDT, DAVID, English
ROPP, STEPHEN C., Political Science
ROSA, JOSE A., Management and Marketing
ROSS, CATHERINE L., Communication Disorders
ROTH, DON ALLEN, Molecular Biology
RULE, DANIEL C., Animal Science
RUSH, LESLIE, Secondary Education
RUSH, R. TIMOTHY, Elementary/Early Childhood Education
RUSSELL, CASKEY, English; American Indian Studies
RUSSELL, DOUG, Art
SANDEEN, ERIC J., American Studies
SANNING, LEE W., Economics and Finance
SANTOS, RUBIA, Music
SCALLEY, ROBERT D., Pharmacy
SCHANTZ, RHODA, Family and Consumer Sciences
SCHATZ, MONA C.S., Social Work
SCHENKER, ALAN E., Political Science
SCHERR, FREDERICK P., Family Practice
SCHMIDT, LAWRENCE, University Libraries
SCHMIDT, RICHARD J., Civil and Architectural Engineering
SCHROEDER, ALAN C., Agricultural and Applied Economics
SCHUHMANN, ROBERT A., Political Science
SCHULTZ, RONALD D., History
SCOTT, SALLY J., University Libraries
SCOTT, WALTER D., Psychology

- SELIG, JOEL L., Law
 SELTING, LEIGH, Theatre and Dance
 SENNER, JILL E., Communication Disorders
 SEVILLE, ROBERT SCOTT.,
 Zoology and Physiology
 SHADER, BRYAN L., Mathematics
 SHADER, CHANYOUNG LEE, Mathematics
 SHAFFER, SHERRILL L.,
 Economics and Finance
 SHALINSKY, AUDREY C., Anthropology;
 American Studies
 SHANG, ZONGBO, Geography, WYGISC
 SHARMA, MRITYUNJAI P., Chemical
 and Petroleum Engineering
 SHAW, SCOTT R., Renewable Resources
 SHELSTAD, MARK L., American
 Heritage Center
 SHERIDAN-RABIDEAU, MARK, Music
 SHERIDAN-RABIDEAU, MARY,
 English, Women's Studies
 SHERLINE, EDWARD D., Philosophy
 SHERMAN, GARY, Criminal Justice
 SHIH, SHAGI-DI, Mathematics
 SHINKER, JACQUELINE J., Geography
 SHOGREN, JASON F., Economics and Finance
 SHORES, LESLIE C., American Heritage Center
 SHUMAN, BRYAN, Geology and Geophysics
 SIGALOV, PAVEL, Modern and
 Classical Languages
 SIMPSON, ELIZABETH S., Special Education
 SINGH, ROHIT, Accounting
 SIVANPILLAI, RAMESH, Botany/WYGISC
 SKAGGS, RODNEY, Civil and
 Architectural Engineering
 SKIBA, ALEXANDRE, Economics and Finance
 SKIBA, HILLA M., Economics and Finance
 SKINNER, DONAL C., Zoology and Physiology
 SKOPEK, TRACY A., Political Science
 SLATER, STEPHANIE, Secondary Education
 SLATER, TIMOTHY F., Secondary Education
 SMITH, CONRAD, Communication
 and Journalism
 SMITH, DEREK, Kinesiology and Health
 SMITH, DOUGLAS R., Mechanical Engineering
 SMITH, KENNETH L., Communication
 and Journalism
 SMITH, MARCI, Kinesiology and Health
 SMITH, MICHAEL A., Renewable Resources
 SMITH, MICHAEL R., Law
 SMITH, RICHARD D., Plant Sciences
 SNIDER, JEFFERSON R., Atmospheric Science
 SNOKE, ARTHUR W., Geology and Geophysics
 SOKOLYK, TATYANA, Economics and Finance
 SOMMER, MICHAEL S., Chemistry
 SOROCHUK, CRAIG, Marketing
 SOUTHARD, ROBERT W., Law
 SPARKS, JEREMY, Aerospace Studies
 SPITLER, JOHN, Mathematics
 SPRAGUE, ROBERT D., Management
 and Marketing
 STAHL, PETER D., Renewable Resources
 STALEY, ROBERT A., University Libraries
 STANESCU, DAN, Mathematics
 STANNARD, MATTHEW, Communication
 and Journalism
 STAYTON, MARK M., Molecular Biology
 STEBBINS, CHRISTINE, English
 STEEVE, ROGER, Communication Disorders
- STEFANOVIC, MARGARETA, Electrical
 and Computer Engineering
 STEINER, MAUREEN B., Geology
 and Geophysics
 STELLERN, JOHN, Special Education
 STEPHENSON, TERESA M., Accounting
 STERBENZ, FREDERIC P.,
 Economics and Finance
 STEWART, JOYCE, English
 STEWART, JUSTIN, Communication
 and Journalism
 STOBART, ROBERT H., Animal Science
 STOCK, MARK, Educational Leadership
 STRAUSS, SARAH, Anthropology
 STRONG, AARON M., Economics and Finance
 STUMP, AMY, Pharmacy
 SULLIVAN, BEVERLY A., Pharmacy
 SUN, QI, Adult Learning and Technology
 SUN, QIAN QUAN, Zoology and Physiology
 SUROVELL, TODD, Anthropology
 SWAPP, SUSAN, Geology and Geophysics
 SWIST, SHANNON L., Veterinary Sciences
 SYLVESTER, ANNE W., Molecular Biology
 TANG, JINKE, Physics and Astronomy
 TANNER, JENNIFER E., Civil and
 Architectural Engineering
 TANNER EHMKE, MARIAH D., Agricultural
 and Applied Economics
 TARANTOLA, CAROL, Communication
 and Journalism
 TAYLOR, CAROLYN J., Secondary Education
 TAYLOR, DAVID T., Agricultural
 and Applied Economics
 TAYLOR, PATRICIA A., Sociology, WYSAC
 TEIXEIRA, M. GLAUCIA, Pharmacy
 TERRILL, LORI J., University Libraries
 THAYER, DAVID, Physics and Astronomy
 THOMAS, D. PAUL, Kinesiology and Health
 THOMPSON, D. CLAUDIA, American
 Heritage Center
 THOMPSON, JASON, English
 THORSNESS, PETER E., Molecular Biology
 THURLOW, THOMAS L., Renewable Resources
 TINKER, DANIEL B., Botany
 TOLO, KHAMA-BASSILI, Modern
 and Classical Languages
 TORRY, ROBERT, American Studies; American
 Indian Studies; English; Religious Studies
 TOWLER, BRIAN F., Chemical and
 Petroleum Engineering
 TRACY, JOHN, Social Work
 TRELEASE-BELL, AMY, Family Practice
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