

G 596 (SOC 596) Independent Study Variable cr. (R-6) Offered every term. Prereq., consent of instr. Work with a faculty supervisor in an area of special interest.

G 597 (SOC 597) Graduate Research 2-3 cr. (R-9) Offered every term. Directed research. Student must develop a specific research or evaluation proposal which is approved by the instructor prior to registration. Those students electing the professional paper option may apply three credits of 597 toward graduation.

G 598 (SOC 598) Internship Variable cr. (R-6) Offered autumn and spring. Prereq., consent of department. Extended classroom experience which provides practical application of classroom learning during placements off campus. Prior approval must be obtained from the faculty supervisor and the Internship Services office.

G 599 (SOC 599) Thesis/Professional Paper Variable cr. (R-6) Offered every term. Students may apply six credits of 599 toward graduation.

Faculty

Professors

Robert W. Balch, Ph.D., University of Oregon, 1972

James W. Burfeind, Ph.D., Portland State University, 1984

Daniel P. Doyle, Ph.D., University of Washington, 1984

Rebecca T. Richards, Ph.D., Utah State University, 1990

Associate Professors

Dusten R. Hollist, Ph.D., Washington State University, 2003

Kathy J. Kuipers, Ph.D., Stanford University, 1999

Teresa R. Sobieszczyk, Ph.D., Cornell University, 2000

Celia C. Winkler, Ph.D., University of Oregon, 1996

Assistant Professors

Daisy M. Rooks, Ph.D., University of California-Los Angeles, 2007

South and Southeast Asian Studies

Professor Ruth Vanita, Advisor

The Liberal Studies Program offers undergraduates at the University of Montana-Missoula an opportunity to study South and Southeast Asian peoples, cultures, histories, societies, as well as their literary, artistic and religious traditions. The minor encompasses the regions of South and Southeast Asia, including the states of India, Nepal, Bhutan, Tibet, Sri Lanka, Bangladesh, Myanmar (Burma), Thailand, Laos, Cambodia, Vietnam, Malaysia, Brunei, Singapore, Indonesia, East Timor, and the Philippines.

The South Asianist faculty of Liberal Studies and the Dean of the College of Arts and Sciences work closely with those faculty from other disciplines at the University of Montana who have research and teaching interests, and competency in regional languages of either South or Southeast Asia.

Students may choose to minor in South and Southeast Asia with a major in any discipline. They must register with the program advisor, and are encouraged to plan their course sequence at least one semester in advance, in consultation with an assigned core faculty advisor from those listed below.

Special Degree Requirements

Requirements for a Minor

Major in any discipline, with a minor in South and Southeast Asian Studies

1. ANTY/SSEA/LS 102H (three credits).
2. Six credits from the following lower-division (100-200) courses: [SSEA/LS 202X, SSEA/RLST 232H (RELS 232), SSEA/RLST 234 (RELS 234), and SSEA/SOCI 212S (SOC 212S)].
3. Nine credits from the following upper-division (300 and above) courses, of which at least 3 credits must be in the humanities (SSEA 342, SSEA 353, SSEA 366, SSEA 368), and 3 credits in the social sciences (SSEA 330X and SSEA 440).
4. No language courses are required. However, students are encouraged to study regional languages through summer institutes, such as SEASSI, or through accredited study abroad experiences in either South, or Southeast Asia.

Courses

U= for undergraduate credit only; UG = for undergraduate or graduate credit, R after the credit indicates the course may be repeated for credit to the maximum indicated after the R. Credits beyond this maximum do not count toward a degree.

South and Southeast Asian Studies (SSEA)

U 102H Introduction to South and Southeast Asia 3 cr. Offered spring. Same as ANTY 102H/LS 102H. An introduction to South and Southeast Asian regions, cultures, societies, and histories, with particular emphasis on artistic, religious and literary traditions from prehistory to the present. An overview approach with different materials and emphases.

U 195 Special Topics 1-6 cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, offerings of new courses, or one-time offerings of current topics.

U 202X South Asia 3 cr. Offered alternate years. Same as LS 202X. Introduction to Southern Asia, its history, cultures, societies, artistic, religious and literary traditions from antiquity to the modern era.

U 212S Social Issues in Southeast Asia 3 cr. Offered even year autumn. Introduction to the cultures, social organization, and contemporary events of Southeast Asia.

U 232H Buddhism 3 cr. Offered autumn. Same as RLST 232H (RELS 232H). A historical introduction to the development of Buddhist thought and practice in the cultures of Asia and the West.

U 234X Hinduism 3 cr. Offered spring, odd-numbered years. Same as RLST 234X (RELS 234). Critical exploration of selected aspects of Hindu thought, narrative and practice, both in contemporary and historical perspective. Focus primarily on India, but with consideration of Hinduism's transformation and impact beyond South Asia.

U 295 Special Topics Variable cr. (R-12) Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 330X Peoples and Cultures of the World: Indonesia and the Philippines 3 cr. Offered autumn odd-numbered years. Same as ANTY 330X (ANTH 330X). Ethnographic survey of societies and cultures of Indonesia and the Philippines.

U 342 Topics in Comparative Literature and Religion 3 cr. Offered every second semester. Same as LS 342. These courses compare major traditions, texts and trends in two or more world civilizations or cultures. Works of literature and/or philosophy are examined in their historical contexts, and in relation to each other.

U 353 Topics in South Asian Religions 3 cr. Offered at least once every three semesters. No prerequisites. This course will examine select topics of central importance with respect to the history of interaction between the major

religions (Hinduism, Islam, Buddhism, Jainism and Sikhism) of South Asia.

U 366 Tibetan Civilization 3 cr. Offered once every two years; no prerequisites. An exploration of the history and culture of a unique civilization that has influenced greatly the cultures of Himalayan, East and South Asia. Special attention will be given to Tibetan religions, modernity, and globalization as they have presented profound challenges to Buddhist traditions.

U 368 Contemporary Buddhism in South and Southeast Asia 3 cr. To be offered at least once every two years, no prerequisites. Like other major religions, modernity and globalization have presented profound challenges to Buddhist traditions. In this course we will explore various contemporary issues that have affected Theravada Buddhist societies-colonial and post-colonial revivalism, religious nationalism, women's rights and social reform-as case studies of some of the major ways religions have confronted modernity.

U 395 Special Topics Variable cr. (R-12) Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

UG 440 Contemporary Issues of Southeast Asia 3 cr. Offered spring even years. Same as ANTY 440 (ANTH 340). Prereq. SSEA 102. An examination of the major issues that affect the contemporary experience of Southeast Asians.

UG 495 Special Topics Variable cr. (R-12) Seminar designed for students with a minor in South and Southeast Asian Studies. Regional or temporal focus may vary.

Faculty

Bradley Clough, Ph.D. Columbia University 1998. (Liberal Studies)

Ranjan Shrestha, Ph.D. Ohio State University 2007 (Economics)

Teresa Sobieszczyk, Ph.D. Cornell University 2001 (Sociology)

Ruth Vanita, Ph.D. Delhi University 1992 (Liberal Studies)

G.G. Weix, Ph.D. Cornell University 1990 (Anthropology)

Women's and Gender Studies Program

- . Special Degree Requirements
- . Courses
- . Faculty

Anya Jabour and Elizabeth Hubble, Co-Directors

Women's and Gender Studies, an interdisciplinary program founded in 1990, encourages the production, discussion, and dissemination of knowledge about women's experiences, oppressions, and achievements, in Montana, the U.S., and the world. In the last decade this focus has broadened to include study of the social and cultural construction of gender, sex, and sexualities. By fostering awareness of cultural and international diversity, as well as of the circulations of power mediated by race, class, age, and sexual orientation, Women's and Gender Studies encourages students to think critically and to envision justice for all peoples.

The Women's and Gender Studies program is administered by the co-directors, with assistance from the program coordinator, in consultation with the Women's and Gender Studies Steering Committee, an interdisciplinary group of faculty and professional associates with teaching, research, and scholarly interests in women and gender.

Students may include Women's and Gender Studies in their studies in two ways. They can major in Liberal Studies with an option in Women's and Gender Studies, or they can complete the Women's and Gender Studies minor.

Students may select coursework from a wide variety of courses offered in the humanities, social sciences, natural sciences, law, education and other disciplines. Women's and Gender Studies offers scholarships, and sponsors or

co-sponsors a variety of events including lectures, discussions, and performances that make a vibrant contribution to both the campus and the Missoula community life.

To be admitted, students must register with the Women's and Gender Studies directors, who will explain option or minor requirements and supervise their program.

Special Degree Requirements

Students may either combine the WGS minor with any major on campus or major in Liberal Studies with the Women's and Gender Studies Option

I. Requirements for a Minor

The Women's and Gender Studies minor is available to students in all majors. It consists of 20 credits. Students must complete three required courses or approved alternatives: (1) WGS 119H, Philosophical Perspectives on Women in the Western Hemisphere, or WGS 263S, Introduction to Women's and Gender Studies, (2) WGS 363, Feminist Theories and Methods, and (3) WGS 463, Women's Studies Capstone (2 credits). In addition, students must complete four elective courses (twelve credits) from the list of Women's and Gender Studies courses. At least one of these courses must be numbered 300-level or above. A course list is published each semester prior to pre-registration. Contact the WGS Office at 243-2584 or visit LA 138A. Students may apply WGS 398, Cooperative Education (internships), toward their elective credits. All requests for substitutions or equivalency must be approved by the director(s) of the Women's and Gender Studies Program.

II. For the Women's and Gender Studies option under the Liberal Studies major, the following requirements must be met (not necessarily in sequence):

1. Completion of Liberal Studies core curriculum. (See the Liberal Studies section of this catalog: <http://www.umt.edu/catalog/cat/cas/libstud.html#degree.>)
2. Completion of WGS/LS 119H or approved alternative.
3. At least 21 credits of course work in relevant, advisor- approved courses numbered above 299. Each semester a list of these courses is published at pre-registration by the Women's and Gender Studies office, LA 138A, (406) 243- 2584. Typical choices are listed below under Courses, but may vary from year to year. Other courses not listed here may be applied toward the option or the minor if approved by the Women's and Gender Studies directors. WGS 398 (internships) may be applied toward these credits.

Courses

U=for undergraduate credit only, UG=for undergraduate or graduate credit, G=for graduate credit. R after the credit indicates the course may be repeated for credit to the maximum indicated after the R. Credits beyond this maximum do not count toward a degree.

Women's and Gender Studies (WGS)

U 119H Philosophical Perspectives on Women in the Western Hemisphere 3 cr. Offered spring. Same as LS and PHL 151H (PHIL 119H). Introduction to the discipline and scope of Western philosophy focusing on women as the subject rather than men. A chronological study following the ideological development in the West of social attitudes and scientific theses.

U 263S Introduction to Women's and Gender Studies 3 cr. Offered autumn. Broad overview of gender and women's issues from a social science perspective. Relevant topics related to the sociological and psychological aspects of gender across culture are explored, including masculinity, femininity, violence, reproductive health, cultural diversity in the expression of gender, issues in sexual orientation, and media contributions to these issues.

U 275S Gender and Society 3 cr. Offered annually. Same as SOCI 275S (SOC 275S). Exploration of the social construction of gender, especially in western, post-industrial societies such as the U.S. How gender ideologies

affect the social definition and position of men and women in work, family, sexual relationship, sexual divisions of labor, and social movements.

U 294 Seminar 1-6 cr. (R-6) Offered intermittently.

U 295 Special Topics 1-6 cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 320 Women in Antiquity 3 cr. Offered intermittently. Same as MCLG and LS 320. Examination of varied sources from Ancient Greece, the Hellenistic World, and republican and imperial Rome to clarify the place of women in communities. Women's contribution to community and the mechanisms by which communities attempted to socialize female populations.

U 323 Women and Social Action in the Americas 3 cr. Offered intermittently. Prereq., one of SW 100, SOCI 101S (SOC 110S), or ANTY 103H (ANTH 101H) or consent of instr. Same as SW 323. Focus on women's experiences of and contributions to social change in North, South and Central America in the mid- to late-20th century. Through case studies, testimonials, discussions with activists and Internet connections examine social constructions of gender, compare forms of social action in diverse cultural, political and historical contexts, link practice to theories of social participation, and reflect on lessons learned from women's experiences.

U 324 Gender and the Politics of Welfare 3 cr. Offered intermittently. Prereq., SW 100 or consent of instr. Same as SW 324. Exploration of the relationship between gender ideologies and the development of social welfare policies. Examination of historic and contemporary social welfare policies, practices and debates in the United States through a gender lens.

U 327 Anthropology of Gender 3 cr. Offered spring even-numbered years. Same as ANTH 327. Prereq., ANTH 201 or consent of instructor. Comparative study of the history and significance of gender in social life.

U 329 Fathers & Daughters in Western Literary Traditions 3 cr. Same as LS 329. Prereq., WRIT 101 (ENEX 101). Examines how relationships between fathers and daughters have been represented, celebrated and critiqued in literature in the Western world, from antiquity to the present.

U 336 American Women Writers 3 cr. Offered spring odd-numbered years. Prereq., LIT 300 (ENLT 301) or consent of instr. Same as LIT 335 (ENLT 336). Consideration of political and aesthetic purposes in women's fiction through a progression of 19th century literary forms: a cautionary seduction novel, sentimental and domestic novels, realism, naturalism, and utopianism.

U 342H Gender Studies in Native American Studies 3 cr. Offered intermittently. Same as NAS 342H. Focus on American Indian gender relations and their cultural continuity and historical evolution. National in scope with concentration on certain tribes. Group analysis of contemporary gender issues relevant to Native American peoples.

U 343 African-American Literature 3 cr. Offered alternate years. Prereq., LIT 300 (ENLT 301) or consent of instr. Same as LIT 343 (ENLT 337). Selected works by African-American authors. Course may define a narrowed focus such as poetry, women writers, etc.

U 360 Gender and Global Development 3 cr. Offered every other year. Prereq. SOCI 101S (SOC 110S). Same as WGS 360. Intermediate level perspectives on colonization, international development, and globalization, with an emphasis on gender issues and impacts.

U 363 Theories and Methods of Feminist Inquiry 3 cr. Offered spring. In-depth exposure to feminist views and critique of the ethics and methods of scientific, social, and literary inquiry. Includes exposure to primary sources and current societal and global issues and movements, research finding, and literature exemplifying these methods of inquiry and the gendered dimensions of such inquiry.

U 370H Women in America: to the Civil War 3 cr. Offered autumn. Same as HSTA 387 (HIST 370).

Interpretive overview of women's experiences in America before the Civil War. Exploration of new definitions of womanhood and "women's sphere" emerging from women's varied experiences in the American colonies and the American Revolution; how immigrant, poor, slave, and western women transgressed the boundaries of their sphere; and how women-from both inside and outside their assigned sphere-reshaped their roles in American society.

U 371H Women in America: from the Civil War 3 cr. Offered spring. Same as HSTA 388 (HIST 371).

Interpretive overview of women's experiences in America after the Civil War. Exploration of such topics as women's associations, the battle for suffrage, organized feminism and its opponents, the industrialization of housework, women in the workforce, reproductive rights, and welfare. Particular attention to women's experiences shaped by class and race as well as by gender.

U 379L Gender and Sexuality in English Fiction 3 cr. Offered yearly. Same as LIT 379L (ENLT 375L) and LS 379. Major 19th or 20th century novels and short stories written in English in different parts of the world and how these texts explore changing concepts of gender and sexuality.

U 380 Gender and Communication 3 cr. Offered autumn. Same as COMM 380. The meaning of gender in our culture and how gender is displayed and perpetuated through our private and public verbal and nonverbal interactions.

U 396 Independent Study Variable cr. (R-12) Offered intermittently.

U 397 Research Variable cr. (R-6) Offered intermittently.

U 395 Special Topics 1-6 cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 398 Internship Variable cr.(R-6) Offered intermittently. Prereq., consent of director. Extended classroom experience which provides practical application of classroom learning during placements off campus. Prior approval must be obtained from the faculty supervisor and the Internship Services office. A maximum of 6 credits of Internship (198, 298, 398, 498) may count toward graduation.

U 463 Women's and Gender Studies Capstone 2 cr. Offered spring. Prereq., WGS 119H, WGS 263S, WS 275S. Capstone course for the Women's and Gender Studies minor.

U 495 Special Topics 1-6 cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 496 Independent Study Variable cr. (R-9) Offered intermittently.

U 497 Research Variable cr. (R-6) Offered intermittently.

G 595 Special Topics Variable cr. (R-12) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

G 596 Independent Study 1-6 cr.(R-6) Offered intermittently. Prereq., consent of instr.

Women's and Gender Studies Affiliated Faculty

Professors

Betsy Bach, Ph.D., University of Washington (Communication Studies)

Casey Charles, J.D., Hastings College fo the Law, 1978; Ph.D. SUNY Buffalo, 1992 (English)

Janet L. Finn, Ph.D., University of Michigan, 1995 (Social Work and Anthropology)

Christine Fiore, Ph.D., University of Rhode Island, 1990 (Psychology)

Rita Sommers-Flanagan, Ph.D., The University of Montana, 1989 (Psychology)

Linda Rutland Gillison, Ph.D., University of Minnesota, 1975 (Classics and Liberal Studies)

Sara Hayden, Ph.D., University of Minnesota, 1994 (Communication Studies)

Anya Jabour, Ph.D., Rice University, 1995 (History)

Jennifer McNulty, Ph.D., University of North Carolina at Chapel Hill, 1993 (Mathematical Sciences)

Ruth Vanita, Ph.D., Delhi University, 1992 (Liberal Studies)

Heather Bruce, Ph.D., University of Utah, 1997 (English)

Ione Crummy, Ph.D., Stanford University, 1992 (French)

Jill Bergman, Ph.D., University of Illinois, Urbana, 1999 (English)

Associate Professors

Karen Ruth Adams, Ph.D., University of California-Berkeley, 2000 (Political Science)

Hiltrud Arens, Ph.D., University of Maryland, 1997 (German)

Bryan Cochran, Ph.D., University of Washington, 2003 (Psychology)

Sarah Halvorson, Ph.D., University of Colorado-Boulder, 2000 (Geography)

Kathleen Kane, Ph.D., University of Texas, 1997 (English)

Kimber Haddix McKay, Ph.D., University of California-Davis, 1997 (Anthropology)

Teresa Sobieszczyk, Ph.D., Cornell University, 2000 (Sociology)

Jennifer Waltz, University of Washington, 1993 (Psychology)

Celia Winkler, Ph.D., University of Oregon, 1996 (Sociology)

Stephen Yoshimura, Ph.D., Arizona State University, 2001 (Communication Studies)

Assistant Professors

Julie Edwards, MS, University of Illinois, Urbana-Champaign (Archivist)

Kathy Kuipers, Ph.D., Stanford University, 1999 (Sociology)

Daisy Rooks, Ph.D., Duke University, 2007 (Sociology)

Kathleen Ryan, Ph.D., University of North Carolina-Greensboro, 2001, (English)

Tobin Shearer, Ph.D., Northwestern University, 2008 (History and Religion)

Christina Yoshimura, Ph.D., Arizona State University, 2004 (Communication Studies)

Adjunct Instructors

Elizabeth Hubble, Ph.D., University of Michigan (French Medieval Studies)

Lee Heuermann, Ph.D., Stony Brook University (Music Composition)

June Ellestad, Ph.D., Washington State University (Sociology)

Richard Sattler, Ph.D., University of Oklahoma (Anthropology)

CLIMATE CHANGE STUDIES

Steven Running, Director

Climate Change Studies is an inter-disciplinary program open to all majors. The program educates students in three areas of the climate change issue: science, society, and solutions. Coursework in the minor provides a foundation that enables students to engage the scientific, societal, and political dimensions of global climate change. Further, the focus on solutions with its orientation toward applied learning will help students develop critical thinking and problem solving skills. Participating students will enhance their major field of study. They will be better prepared to enter a broad range of professions and graduate programs where they can meet the emerging challenges and opportunities arising from climate change. Climate Change Studies is a joint program between the College of Forestry and Conservation, College of Arts and Sciences, and College of Technology.

Requirements for a Minor

To earn a minor in Climate Change Studies, students must successfully complete 21.0 credits: a 3.0 credit interdisciplinary introductory course (CCS 203) and 6.0 credits in each of the three areas listed below.

Course # and Description	Credits
CCS 203 Climate Change: Science & Society	3
Six credits from the following: Climate Change Science Courses	
CCS/GEO 108N (GEOS 108N) Climate Change - Past and Future	3
CCS/ERTH 303N Weather and Climate	3
CCS/GEO 382 (GEOS 382) (UG) Global Change	3
CCS/NRSM 408 (FOR 408/BIO 408/GEO 408) Global Cycles and the Climate Change	3
CCS/GEO 488 (GEOS 488) (UG) Snow, Ice and Climate	3
Six credits from the following: Climate Change Science and Society Courses	
CCS 324 Sustainable Climate Policies: China and the USA	3
CCS/COMM/EVST 379 Communication, Consumption and Climate	3
CCS/NRSM 449E (RSCN 449) Climate Change Ethics and Policy	3
CCS/ECNS 445 (ECON 445) International Environmental Economics and Climate Change	3
Six credits from the following climate change solutions courses, with at least one course taken in category A, which requires practical application	
Climate Change Solutions Courses: Category A	
CCS/NRG 298 Energy Internship	2
CCS 398 Climate Change Internship	2-4
CCS 391 Climate Change Practicum	2-4
CCS/ENST 485 (EVST 485) Environmental Citizenship	3
Category B	
CCS/NRG 102 Intro to Energy Systems II	3
CCS/BGEN 160S (TASK 160S/BUS 160S) Issues in Sustainability	3
CCS/NRG 191 Energy Practicum	2
CCS/NRG 235 (CAR 235T) Building Energy Conservation	3
CCS/NRG 242 Solar & Wind Systems	3

Courses Climate Change Studies (CCS)

U 102 Introduction to Energy Systems II 3 cr. Offered spring. Same as NRG 102. Prereq., NRG 101 or consent of instructor. A survey of renewable energy systems and technologies. Addresses physical and technical aspects of wind, solar, geothermal, hydro, tidal, biological, and wave energy systems. Consideration is given to engineering, economic, social, environmental, and political factors that determine implementation and sustainability.

U 108N Climate Change - Past and Future 3 cr. Offered autumn. Same as GEO 108N (GEOS 108N). The geoscience perspective on the earth's climate system. Climate processes and feedbacks, climate history from early earth to the ice ages, present and future changes due to natural processes and human activities.

U 160S Issues in Sustainability 3 cr. Offered autumn and spring. Same as BGEN 160S (TASK 160S/BUS 160S). This literature-intensive course is intended to expose the student to a variety of essays addressing the balance of

economic development with the principles of sustainability and social equity. The student is offered an introduction to sustainability concepts, natural systems/cycles and environmental economics. Natural capitalism and triple bottom line maximization is explored, along with the role of corporations and small businesses in sustainable development. A survey of issues surrounding corporate social responsibility and sustainability-driven innovation will be conducted.

U 191 Energy Practicum 2 cr. Offered intermittently. Same as NRG 191. Prereq., EET 111 or consent of instructor. A practicum that provides students with a supervised field experience. Students gain hands-on experience with energy specific technologies.

U 203 Climate Change: Science and Society 3 cr. Offered autumn. Foundational course on the scientific and social dimensions of global climate change with the goal of providing students with a basic understanding of the fundamental scientific, social, political and technological issues arising from rapid climatic change.

U 235 Building Energy Conservation 3 cr. Offered spring. Same as CAR 235. Provides an overview of energy efficiency opportunities in residential buildings and prepares the student to take the National RESNET Home Energy Rater Exam. Familiarity with residential construction and basic energy terminology is useful though not required.

U 242 Solar and Wind Systems 3 cr. Offered autumn. Same as NRG 242. Introduction to the fundamentals of solar and wind energy for the design and installation of solar and wind systems. Includes an overview of the physics and chemistry of the resource and the technology, and will prepare students for a career in renewable energy or for installing a renewable energy system on their own home.

U 298 Energy Internship 2 cr. Offered every term. Consent of instructor required. Same as NRG 298. Extended classroom experience providing practical application of classroom learning through on the job training in a student's field of study. This experience increases student skills, prepares them for initial employment, and increases occupational awareness and professionalism.

U 303N Weather and Climate 3cr. Offered autumn. Same as EARTH 303N (GPHY 303N). Prereq., GPHY 111N (GEOG 102N) or consent of instructor. Origin, composition, structure, and dynamics of the atmosphere, gas and radiation laws, energy budget and balance, weather elements and North American weather systems.

U 324 Sustainable Climate Policies: China and the USA 3 cr. Offered summer. Same as PSCI 324. Not open to Fr So. Explores historic, current, and future greenhouse-gas (GHG) emissions of the United States and China, reasons why both are the two largest CO₂emitters, and prevailing national and subnational government policies and nongovernmental actions that affect emissions mitigation and adaptation.

U 352 Climate Change Field Studies 2 cr. Offered summer. This is an interdisciplinary field course focused on climate change impacts and adaptation. Through site visits and meetings with key decision-makers, students gain knowledge of projected impacts due to climate change (water availability, wildfire, beetle kill, biodiversity), the impacts to various sectors of human society (land management, food and water security, economic stability, and livelihoods), and different mitigation and adaptation responses.

U 362 Climate Change Lecture Series 1 cr. Offered autumn. The Climate Change Lecture Series explores current issues in climate change. Themes and speakers vary year by year, and the course can be repeated three times for credit.

U 382 Global Change 3 cr. Offered spring. Same as GEO 382 (GEOS 382). Prereq., consent of instructor. Lectures, readings, and discussions on geological and geochemical processes that affect global change using recent literature; carbon dioxide buildup, greenhouse effect, ozone depletion, desertification, ice ages, and other global events.

U 391 Climate Change Practicum 2-4 cr. Offered autumn and spring. Prereq., consent of instructor. Provides an opportunity for students to design and implement a capstone project involving creative solutions to climate change.

U 379 Communication, Consumption, and Climate 3 cr. Offered spring. Same as COMM 379 and EVST 379. Analyzes consumption as a communication practice, investigates discourses that promote consumption, and illuminates environmental impacts on consumption.

U 398 Climate Change Internship 2-4 cr. Offered autumn and spring. Prereq., consent of instructor. Hands-on, "real world" experience working with local, regional, national, or international groups to address climate change. Students gain supervised, practical work experience with specific projects and organizations; create a network of professional contacts; and have an opportunity to apply ideas and approaches studied in the Climate Change Studies minor.

UG 408 Global Cycles and the Climate Change 3 cr. Offered spring even numbered years. Same as NRSM 408 (FOR 408/BIO 408). Exploration of how variations in the availability or utilization of critical Earth elements influences the atmosphere, the oceans, and the terrestrial biosphere including the natural and agricultural ecosystems on which we depend.

UG 445 International Environmental Economics and Climate Change 3 cr. Offered autumn every other year. Same as ECNS 445 (ECON 445), EVST 445. Prereq., ECNS 201S (ECON 111S). An introduction to the economics of various policy approaches towards climate change and other international environmental issues such as trans-boundary pollution problems, international trade and the environment and pollution haven hypothesis.

UG 449E Climate Change Ethics and Policy 3 cr. Offered Fall. Same as NRSM 449 (RSCN/EVST 449). This course focuses on the ethical dimensions of climate change policy. It covers the following major topics: (1) climate change, personal and collective responsibilities, (2) ethics, climate change and scientific uncertainty, (3) distributive justice and international climate change negotiations, (4) intergenerational justice and climate change policy.

U 485 Environmental Citizenship 3 cr. Offered spring. Same as ENST 485 (EVST485). Open to juniors and seniors only or by permission of instructor. Develops environmental citizenship through student-initiated projects informed by principles of social marketing.

UG 488 Snow, Ice and Climate 3 cr. Offered spring. Same as GEO 488 (GEOS 488). Prereq., M 95 (MAT 100). Study of basic physical processes occurring in snow and ice, and how these processes govern the interaction between frozen water and the climate system.

U 494 Seminar- variable credit 1-4cr. Offered intermittently. A seminar on a current climate change topic.

Faculty

Science Area

Dr. Rebecca Bendick, Assistant Professor, Department of Geosciences

Dr. Cory Cleveland, Assistant Professor of Soil Science

Dr. Michael De Grandpre, Professor, Department of Chemistry

Dr. Sarah Halvorson, Associate Professor and Departmental Chair of Geography

Dr. Joel Harper, Associate Professor, Department of Geosciences

Dr. Anna Klene, Associate Professor, Department of Geography

Dr. Scott Mills, Professor of Wildlife Population Ecology

Dr. Curtis Noonan, Associate Professor, Department of Biomedical and Pharmaceutical Sciences

Dr. Steve Running, Regent's Professor of Ecology, Director of Numerical Terradynamics Simulation Group

Society Area

Dr. Richard Barrett, Emeritus Professor, Department of Economics, State Legislator

Dr. Len Broberg, Professor, Department of Environmental Studies

Dr. James Burchfield, Interim Dean and Research Professor, College of Forestry and Conservation

Dr. Ulrich Kamp, Associate Professor, Department of Geography

Dr. Derek Kellenberg, Assistant Professor, Department of Economics

Dr. Peter Koehn, Professor, Department of Political Science

Dr. Anna Prentiss, Associate Professor, Department of Anthropology

Dr. Christopher Preston, Associate Professor, Department of Philosophy

Dr. Rebecca Richards, Professor, Department of Sociology

Dr. Steve Schwarze, Associate Professor, Department of Communication Studies

Dr. Dane Scott, Director, Center of Ethics, Associate Professor, Department of Society and Conservation

Dr. Terry Weidner, Director, Mansfield Center

Solutions Area

Dr. Georgia Cobbs, Associate Professor, Department of Curriculum and Instruction

Dr. Brian Kerns, Engineer, Alternative Energy Technology Program

Dr. Martin Horejsi, Assistant Professor, Department of Curriculum and Instruction

Nicky Phear, Instructor and Program Coordinator, Climate Change Studies

Dr. Bradley Layton, Program Director, Energy Technology Program

Dr. Robin Saha, Assistant Professor, Department of Environmental Studies

Lisa Swallow, Program Director, Department of Business Technology

Nadia White, Assistant Professor, School of Journalism

Dr. Laurie Yung, Director of Wilderness Institute; Research Assistant Professor

College of Forestry and Conservation Course Descriptions

[This section of the catalog was edited after the catalog was published. Updated October 22, 2012.](#)

Courses

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Animal Science (ANSC)

U 262 (FOR 362) Range Livestock Production 3 cr. Offered spring odd numbered years. Consent of instr. An introduction to livestock production in natural systems and the role of livestock production in the world food situation;

emphasizes selection, production and management principles of beef cattle systems.

U 320 (FOR 461) Animal Nutrition 3 cr. Offered spring. Consent of instr. Elements of animal nutrition, physiology of ruminant nutrition, nutritional characteristics of forage plants related to nutrition requirements of livestock and wildlife, and nutritional strategies of free-roaming animals.

Forestry (FORS)

U 140 (FOR 140) Urban Forestry 2 cr. Offered spring. An introduction to urban forestry principles and practices. Benefits of the urban forest. Topics covered include plant species selection, site design, site assessment, planting, watering, fertilization, insects and diseases, pruning and tree care, inventory of property values, and community forestry development.

U 191 (FOR 195) Special Topics Variable cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 192 (FOR 196) Independent Study Variable cr. (R-3) Offered every term. Prereq., consent of instr. Problems course designed to allow individual research at the undergraduate level.

U 200 (FOR 200) Forest Resources Measurements Camp 2 cr. Offered summer. Intensive two-week resident camp at the Lubrecht Experimental Forest. Introduction to the common measurements and skills used in identifying, quantifying, and understanding natural resources.

U 201 (FOR 201) Forest Biometrics 3 cr. Offered autumn. Prereq., M 115 (MATH 117) or M 151 (MATH 121) or M 162 (MATH 150) or M 171 (MATH 152) or M 172 (MATH 153). Introduction to probability and statistical methods for forestry and environmental sciences covering natural resource applications of common probability distributions, data analysis, hypothesis testing, and regression.

U WRIT 222 (FOR 220) Technical Approach to Writing 2 cr. Offered every term. Emphasis on strategy, style and tone in effective technical prose. Traditions of technical writing and how to adopt a wide range of tones and styles in writing various technical documents to diverse audiences. Focus on more effective technical sentences, paragraphs and larger writing components. Assignments include analyses, summaries, employment documents, research reports, case studies and editing/revision exercises.

U 230 (FOR 230) Forest Fire Management 2 cr. Offered spring. Fire as an ecological factor in Western forests is presented. Fire weather, the measurement of fire weather, and the factors of fuel, weather and topography that influence fire behavior, and fire management decisions are included. NFDRS, state and national fire policy evolutions are discussed. Basic fire suppression tactics are also presented.

U 232 (FOR 232) Forest Insects and Diseases 2 cr. Offered spring. Identification, significance of and remedies for insect infestations and infectious and non-infectious diseases of forests and forest products.

U 235 (FOR 235) Problem Solving for Forest Operations 4 cr. Offered autumn. Prereq., M 115 (MATH 117) or M 121 (MATH 111) or M 151 (MATH 121) or M 162 (MATH 150) or M 171 (MATH 152) or M 172 (MATH 153). Introduction to problem solving including the fundamentals of statics and mechanics of materials presented in the context of forest operations.

U 240 (FOR 240) Tree Biology 2 cr. Offered autumn and spring. Suggested coreq., FORS 241N (FOR 241N). The physical and biological requirements for the growth and development of trees. Discussions of: identification, classification, range, and economic importance of the major tree species of North America.

U 241N (FOR 241N) Dendrology 3 cr. Offered autumn and spring. Suggested coreq., FORS 240 (FOR 240). Methods and techniques for identifying the major families of North American trees, based on gross morphological and anatomical features. Building and use of identification keys.

U ENSC 245N (FOR 210N) Introductory Soils 3 cr. Offered autumn and spring. Prereq., CHMY 121N (CHEM

151N). An introduction to the chemical, physical, biological and morphological properties of soils.

U 250 (FOR 250) Introduction to GIS for Forest Management 2 cr. Offered every term. A practical introduction to the use of geographic information systems for storing, retrieving, analyzing and displaying spatial data.

U 291 (FOR 295) Special Topics Variable cr. (R-6) Offered intermittently. Experimental offerings of visiting professors; new courses or one-time offerings of current topics.

U 292 (FOR 296) Independent Study Variable cr. (R-3) Offered every term. Prereq., consent of instr. Individual research at the undergraduate level.

U 302 (FOR 302) Forest Mensuration 3 cr. Offered spring. Prereq., FORS 201 (FOR 201) or STAT 216 (MATH 241) or SOCI 202 (SOC 202) or WILD 240 (WBIO 240); and M 121 and M 122 (MATH 111 and MATH 112) or M 151 (MATH 121) or M 162 (MATH 150) or M 171 (MATH 152) or M 172 (MATH 153). The theory and practice of timber inventory and growth projection, including field measurements, sampling procedures, statistical methods, inventory compilation, and stand growth simulation under specified management prescriptions. Stand growth under specified management prescriptions.

U 307 (FOR 307) Forest Vegetation Management Models 3 cr. (R-6) Offered autumn. Consent of instr. Hands on experience in applying the common simulation models used by forest managers in forecasting the development of forest vegetation. Includes elements of model building and evaluation.

U 320 (FOR 320) Forest and Environmental Economics 3 cr. Offered autumn and spring. Prereq., ECNS 201S (ECON 111S); and M 121 and M 122 (MATH 111 and MATH 112) or M 151 (MATH 121) or M 162 (MATH 150) or M 171 (MATH 152) or M 172 (MATH 153). Economic techniques to support decision making about the allocation of scarce resources, and management of forests for timber and other ecosystem services.

U 330 (FOR 330) Forest Ecology 3 cr. Offered autumn and spring. Prereq., ENSC 245N (FOR 210N); and BIOC 105N (BIOL 120N) or BIOB 170N (BIOL 108N) or ~~BIOB~~ BIOE 172 or BIOB 160N (BIOL 110N) or FORS 240 (FOR 240); and FORS 201 (FOR 201) or STAT 216 (MATH 241) or SOCI 202 (SOC 202) or WILD 240 (WBIO 240) or PSYX 222 (PSYC 220). Examination of physical and biological factors affecting forest structure, composition, and function, including biodiversity, disturbance, and nutrient cycling. Field labs throughout Northern Rockies including developing skills in field observation, data interpretation and problem solving.

U 331 (FOR 331) Wildland Fuel Management 3 cr. Offered autumn. Prereq., FORS 230 (FOR 230) or consent of instr. The fire ecology of some western vegetation types is discussed. Elements of the principles of wildland fuel management are presented. Prescribed fire use and mechanical manipulation are matched to historic ecosystem processes. Smoke management considerations and health issues are also presented.

U 333 Basic and Applied Fire Ecology 3 cr. Offered spring. Prereq., FORS 230 (FOR 230). A detailed, analysis of fire ecology in terrestrial ecosystems with a focus on the Rocky Mountains, including fire history, fire effects, landscape pattern, land use legacies, and management implications.

U 340 (FOR 340) Forest Products Manufacturing 2 cr. Offered autumn. Survey of the manufacture of wood-based products generated from timber harvest. Laboratory field trips to several local manufacturing facilities.

U 341 (FOR 341) Timber Harvesting and Roads 3 cr. Offered spring. Prereq., WRIT 222 (FOR 220). An overview of harvesting system capabilities and selection for multiple resource objectives. Fundamentals of forest road management. Best management practices as they apply to forest operations in Montana and the western United States. ng. Field labs throughout Northern Rockies including developing skills in field observation, data interpretation and problem solving.

U 342 (FOR 342) Wood Anatomy, Properties and Identification 3 cr. Offered spring. Prereq., BIOC 105N (BIOL 120N) or FORS 240 or FORS 241N (FOR 240 or 241N). Lecture and laboratory investigation of the structure, identification and physical and mechanical properties of the commercial tree species of North America.

U 347 (FOR 347) Multiple Resource Silviculture 3 cr. Offered autumn and spring. Prereq., FORS 330 (FOR 330) or BIOE 370 (BIOL 340). An introduction to the concepts and application of silvicultural techniques to forest ecosystems to meet multiple resource objectives.

U 350 (FOR 350) Forestry Applications for GIS 3 cr. Offered autumn. Prereq. FORS 250 (FOR 250). Introduction to the basic concepts and techniques of computerized spatial data management and analysis systems and application to natural resource management.

U 351 (FOR 351) Photogrammetry and Remote Sensing 3 cr. Offered spring. Prereq., M 121 and M 122 (MATH 111 and MATH 112) or M 151 (MATH 121) or M 162 (MATH 150) or M 171 (MATH 152) or M 172 (MATH 153). The theory and application of photo- and electro-optical remote sensing for mapping resources and developing information systems.

U 391 (FOR 395) Special Topics Variable cr. (R-12) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 392 (FOR 396) Independent Study 1-3 cr. (R-10) Offered every term. Prereq., consent of instr. Individual study or research problems.

U 398 (FOR 398) Internship Variable cr. Offered every term. Prereq., consent of department. Extended classroom experience that provides practical application of classroom learning during placements off campus. Prior approval must be obtained from the faculty supervisor and the Internship Services office. A maximum of 6 credits of Internship (198, 298, 398, 498) may count toward graduation.

UG 430 (FOR 430) Forest Meteorology 3 cr. Offered autumn odd numbered years. Prereq., Consent of instr. A brief introduction to synoptic and mesoscale meteorology, followed by more intense study of physics in the forest environment: transfers of heat, light and momentum and their influences on plant structure, function, productivity and survival.

UG 434 (FOR 434) Advanced Forest Roads 2 cr. Offered autumn. Prereqs., FORS 235 and FORS 340 and FORS 341 and FORS 351. The purpose of this course is to help students understand the principles and skills of forest road design and the concepts of forest transportation planning. The course will cover the basic topics of road location, design, construction, and maintenance and provide students with techniques to identify the combination of roads, facilities, and transport systems which minimize costs or maximize revenue for primary and secondary road systems.

UG 435 (FOR 435) Advanced Timber Harvesting 2 cr. Offered autumn. Prereqs., FORS 235 and 341 (FOR 235 and 341). This course covers the fundamentals of logging feasibility and cost analyses of various timber harvesting systems including the characteristics and performance of ground vehicles, cable and aerial systems; cost factors and cost analysis procedures; safety issues; and environmental impacts of harvesting systems.

UG 436 (FOR 436) Forest Operations Evaluation and Project Planning 3 cr. Offered autumn. Prereq., FORS 320 (FOR 320). This course introduces sensitivity analysis; break-even analysis; risk analysis; multistage sequential analysis; multiattribute analysis; project planning; and contracting.

UG 437 (FOR 437) Forest Operations and Applied Restoration Capstone 3 cr. Offered spring. Prereq., FORS 435 (FOR 435), NRSM 385 (FOR 385), ENST 230H (EVST 167H). FORS 230 (FOR 230) and NRSM 360 (FOR 360) strongly recommended. Principles of ecological restoration and techniques for implementing restoration strategies for terrestrial and aquatic systems.

UG 440 (FOR 440) Forest Stand Management I 3 cr. Offered autumn. Prereq., FORS 302, 341, 347 (FOR 302, 341, 347) and WRIT 222 (FOR 220). The management and manipulation of forest stands to reach multiple objectives, with a focus on the planning of forest operations for a community partner.

UG 441 (FOR 441) Forest Contract Administration 3 cr. Offered intermittently. Prereq., FORS 440 (FOR 440) or consent of instructor. The development of project documents, bidding procedures, and contracts for forest operations.

UG 442 (FOR 442) Technical Processing of Wood Products 5 cr. Offered intermittently. Prereq., FORS 340 (FOR 340). Lecture, discussion, laboratory manufacture, and evaluation of solid and composite wood products. Exercises include lumber manufacture and drying at College's sawmill; plywood, laminated beam manufacture and strength testing; particle board and flakeboard manufacture and testing.

UG 447 (FOR 447) Advanced Silviculture 3 cr. Offered autumn. Prereq., FORS 347 (FOR 347) or consent of instr. Examination of silvicultural topics such as regeneration practices, thinning/stand density concepts, and silvicultural systems at an advanced level.

UG 480 (FOR 480) Forest and Rangeland Area Planning and Design 3 cr. Offered autumn. Prereq., senior standing, FORS 347 (FOR 347) NRS 360 (FOR 360), PTRM 310 (RECM 310) WILD 370 (WBIO 370); senior or graduate standing; or consent of instr. A multidisciplinary planning team approach to developing detailed, site-specific resource management planning for units of forest and rangeland at the area or watershed level. Includes use of geographic information systems, computer modeling, and linear programming.

UG 481 (FOR 481) Forest Planning 3 cr. Offered spring. Prereq., FORS 320 and FORS 347 (FOR 320 and 347) or consent of instr. Integrated multiple use planning at the forest-wide level: defining multi-resource management goals, generating management alternatives, projecting outcomes, assessing environmental impacts, and implementing preferred option.

UG 491 (FOR 495) Special Topics Variable cr. (R-12) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 492 (FOR 496) Independent Study 1-3 cr. (R-10) Offered every term. Prereq., consent of instr. Individual study or research problems.

U 495 Wildland Prescribed Fire Practicum 3 cr. Offered wintersession. Co-convened with FORS 544. Prereq. Fire experience and Consent of Instructor. An intensive field course providing students with technical training, practical applications, and theoretical foundations in ecological burning for restoration purposes. Class is typically held in southeastern United States.

U 499 (FOR 497) Senior Thesis 3 cr. Offered autumn and spring. Prereq., senior standing and consent of instr. Preparation of a major paper based on study or research in a field selected according to the needs and objectives of the student.

UG 498 (FOR 498) Internship Variable cr. Offered every term. Prereq., consent of instr. Extended classroom experience which provides practical application of classroom learning during placements off-campus. Prior approval must be obtained from faculty advisor and Internship Services office. A maximum of 6 credits of Internship (198, 298, 398, 498) may count toward graduation.

G 500 (FOR 500) Forest Growth and Yield 3 cr. Offered spring. Prereq., consent of instr. Offered alternate years. Theory and methods for projecting quantitative measures of tree and stand growth over time; includes analysis of computer growth and yield models used in the region.

G 503 (FOR 503) GIS: Methods and Applications I 3 cr. Offered autumn. Prereq., consent of instr. Introduction to the theory and development of statistical gradient and predictive distribution models in the resource and conservation sciences. Course will develop climatic, edaphic, biophysical, and inventory data sources for use in predictive distribution modeling. Survey of multiple modeling approaches, limitations and assumptions, and applications in the resource and conservation fields. Emphasis on the integration of GIS and raster analysis methods with spatial and non-spatial statistical techniques.

G 504 (FOR 504) GIS: Methods and Applications II 3 cr. Offered spring. Prereq., FORS 503 (FOR 503). Continuation of 503.

G 505 (FOR 505) Sampling Methods 3 cr. Offered spring. Prereq., consent of instr. Fundamentals of statistical

sampling emphasizing natural and environmental resource applications. Principles of inferences and alternative estimators are studied in the context of simple random, systematic, unequal probability, stratified, and 3P/Poisson designs. Variable radius plot sampling, line intersect sampling, and other probability proportional to size designs used in forest and ecological inventories are also covered.

G 508 (FOR 508) Modeling Forest Dynamics 3 cr. Offered autumn odd numbered years. Prereq., FORS 500 (FOR 500) and some experience with statistical methods and a programming language. Introduction to the construction of simulation models for forecasting change in forest vegetation. Survey of alternative modeling approaches followed by construction of a simulator. Includes specification of conceptual model, statistical analysis of data, and programming a working simulator.

G 521 Heuristic Optimization for Spatial Forest Management Planning 3 cr. Offered spring even-numbered years. Prereq. FORS 481 (FOR 481) or equiv. and consent of instr. Modern heuristic optimization techniques and their applications to solving spatially explicit forest planning problems.

G 533 (FOR 533) Use of Fire in Wildland Management 3 cr. Offered autumn even-numbered years. Prereq., consent of instr. Evolution of federal fire policy is discussed. Western fire ecology and the planned use of fire for wildlife, range, and forest applications of prescribed fire are presented. Fire behavior and a fire science vocabulary are introduced. Students review literature, present seminars, and lead discussions.

G 538 Applied Statistical Modeling in Ecology 3cr. Offered in the Fall. Prerequisites: STAT451/452 or equivalent. This is an applied course covering advanced statistical modeling techniques using examples from forestry, ecology, and the environmental sciences. Covers data management, visualization, and scripting with *R*, an open source data analysis and statistics platform. Explores various parametric and semi-parametric modeling strategies that allow for non-linear response functions and/or non-Gaussian response distributions. Estimation and inference in the context of generalized linear models, generalized additive models, and classification and regression trees are discussed using examples from the scientific literature. Lays the foundation for subsequent graduate-level analytic coursework.

G 544 Advanced Prescribed Fire Practicum 3 cr. Offered wintersession. Co-convened with FORS 495. Prereq. Consent of Instructor. An intensive field course providing students with technical training, practical applications, and theoretical foundations in ecological burning for restoration purposes. Students will practice leadership skills by supervising and training fire personnel in application of prescribed fire. Class typically held in southeastern United States. Credit is not allowed for both FORS495 Wildland Prescribed Fire Practicum and FORS544 Prescribed Fire Practicum.

G 545 (FOR 545) Silviculture Research 1 cr. (R-6) Offered intermittently. Prereq., consent of instr.; prereq. or coreq., FOR 347 or equiv. Reading and discussion of scientific literature related to silvicultural practice and science. Different topic each semester. Students become familiar with silviculture literature, develop skills for scrutinizing scientific literature, and examine silvicultural topics in detail.

G 547 (FOR 547) Forest Vegetation Dynamics 3 cr. Offered autumn. Prereq., consent of instr. Role of disturbances, plant interactions, tree architecture, and structure on forest stand development. Laboratory provides experience with vegetation development reconstruction. Discusses even-aged, uneven-aged, single- and mixed-species stand development as well as landscape linkages.

G 548 (FOR 548) Forest Stand Dynamics and Culture 1 cr. Offered intermittently. Prereq., consent of instr. One-week continuing education course designed to present emerging concepts in stand dynamics and stand culture to practicing silviculturists. Topics include even- and uneven-aged stand dynamics and density control, fire management, fertilization, and stand health.

G 551 (FOR 551) Digital Image Processing 4 cr. Offered autumn even numbered years. Prereq., FORS 351 (FOR 351) or consent of instr. Fundamentals of electro-optical digital remote sensors, data compilation, preprocessing, and pattern recognition.

G 594 (FOR 594) Graduate Seminar 1 cr. (R-12). Offered Spring. Prereq. graduate standing. Presentations by students, faculty, and professionals on issues and topics in their field.

G 595 (FOR 595) Special Topics Variable cr. (R-12) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

G 596 (FOR 596) Independent Study 1-3 cr. (R-10) Offered every term. Prereq., consent of instr. Individual study or research problems.

G 598 (FOR 598) Internship Variable cr. (R-15) Offered every term. Prereq., consent of instr. Extended classroom experience which provides practical application of classroom learning during placements off campus. Prior approval must be obtained from the faculty supervisor and the Internship Services office.

G 599 (FOR 599) Professional Paper Variable cr. (R-15) Offered autumn and spring. Preparation of Master of Ecosystem Management professional paper.

G 697 (FOR 597) Graduate Research Variable cr. (R-15) Offered every term. Independent graduate research in forest management, wood science, soils, wildlife management, silviculture, recreation and other topic areas.

G 699 (FOR 699) Thesis Variable cr. (R-15) Offered every term. Preparation of thesis/dissertation.

Natural Resource Science and Management (NRSM)

U 121S (RSCN 121S) Nature of Montana 3 cr. Offered autumn. An exploration of the major natural resource management issues facing the people of Montana and the social processes to manage environmental conflicts. Provides an introduction to the function of ecological systems and the impacts of human uses on the environment and looks at strategies for addressing global climate change, ex-urban population growth, and protecting environmental quality.

U 170 (RSCN 170) International Environmental Change 3 cr. Offered spring. An introduction to natural and anthropogenic environmental change from ancient to contemporary times. Exploration of the historical role and importance of ecological disturbance on the development and maintenance of terrestrial ecosystems around the world. Introduction to fields of study available in the College of Forestry and Conservation.

U 180 (FOR/WBIO/RSCN 180) Careers in Natural Resources 2 cr. Offered autumn and spring. Subject matter and fields of study within natural resources management. Topics include forestry, wildlife biology, range, water, recreation management, forest products production, and other opportunities for careers in natural resources.

U 191 (RSCN 195) Special Topics Variable 1-6 cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one time offerings of current topics.

U 246N Natural History, Ecology, and Environmental Management of South Queensland 3 cr. Offered summer. General overview of ecological, biological and geological principles, as examined through the natural history and environmental management of ecosystems of Queensland, Australia. Field projects include developing skills in scientific hypothesizing, field observation techniques, data interpretation and implications.

U 265 (FOR 265) Elements of Ecological Restoration 3 cr. Offered autumn. Prereq., one course in the ecological or biological sciences: BIOO 105N, BIOB 160N, BIOB 170N, BIOB 172, BIOE 370, BIOE 428, BIOE 447 or BIOE 448 (BIOL 120N, 110N, 108N, 340, 366, 447, or 448); FORS 330 (FOR/RSCN 330); or NRSM 271N or NRSM 462 (FOR/RSCN 271N, 462) or consent of instructor. Overview of the natural and social science elements of ecological restoration, including the ecological foundations of restoration, practices used to restore terrestrial and aquatic habitats, philosophical and ethical challenges involved, and current initiatives in Montana and the United States. Includes Saturday field trips.

U 271N (RSCN 271N) Conservation Ecology 3 cr. Offered autumn. An overview of ecological concepts and how ecology is applied to further our understanding of ecosystems and conservation. Topics include: ecosystems

functions and values, biomes, natural selection and speciation, biodiversity, succession, climate change, fragmentation, protected areas, impacts of exotic species and other human influences on ecosystem functions.

U 273 (RSCN 273) Wilderness and Civilization Field Studies Variable 1-3 cr. (R-6) Offered autumn and spring. Field studies in ecology and conservation. Includes natural history, field journaling, ecological monitoring, protected area management, and community conservation. One-day trips as well as extended backcountry trips. Part of the Wilderness and Civilization program.

U 311 (FOR 311) Field Studies in Ecological and Human Communities 2-3 cr. (R-12) Offered every term. Prereq., consent of instr. Via extended backcountry travel, experiential examination of the structure and function of the ecosystems occurring within the course area. Also investigates the relationship of those ecosystems with the people that manage, live, and work in the area. Offered by the Wild Rockies Field Institute.

U 321 (RSCN 321) Field Studies of Energy Systems in Montana 2-3 cr. Offered Summer. Via an extended bicycle tour of Montana, students examine a variety of energy developments and their environmental, social, and economic implications.

U 335 (FOR 335) Environmental Entomology 3 cr. Offered autumn. An introduction to the importance of insects in ecosystem function and process, and their use in ecological monitoring as indicators of ecological change, degradation, and the efficacy of ecological restoration efforts. This course also covers the effects of climate change and biological invasions in the context of both pest and beneficial insect species.

U 345 (RSCN 345) Watershed Dynamics 3 cr. Coreq. ENST 291, 391 (EVST 210, 395) ~~392~~, NRSM 346 (RSCN 346). Offered each autumn by Northwest Connections. Via hands on application in rural Montana, students investigate watershed function; introductory stream hydrology and morphology; and fish, amphibian and aquatic furbearer habitat characteristics. The course also explores impacts of road building, timber harvest, and watershed fragmentation on watershed and stream function, fish habitat, and fish populations.

U 346 (RSCN 346) Forests and Communities 3 cr. Coreq., ENST 291, 391, (EVST 210, 395) ~~392~~, NRSM 345 (RSCN 345). Offered each autumn by Northwest Connections. Via backcountry travel and hands on field application in rural Montana, students will be immersed in the ecology of forested ecosystems in Northwest Montana, including plant succession, fire ecology, soil science and wildlife ecology.

U 352 Himalayan Environment and development 3 cr. Offered summer only. Coreq., PTRM 353 (RECM/FOR/GPHY 353). This course covers the contentious issues surrounding environment and development in the Himalaya using the Garhwal region of India as the example.

U 360 (FOR 360) Rangeland Management 3 cr. Offered intermittently. Prereq., junior standing or consent of instr. An introduction to rangelands and their management, grazing influences, class of animal, grazing capacity, control of livestock distribution, improvements, competition and interrelationships with wildlife. Laboratory exercises to gain on-site experience on topics and concepts presented in lectures.

U 363 (RSCN 361) Range Forage Plants 3 cr. Offered intermittently. Prereq., junior standing or consent of instructor. Description, identification, forage value and ecology of forage plants of the western United States; important weed species, management of grazing lands, and the relationship of ecophysiology and morphology to grazing response.

U 365 (FOR 365) Foundations of Restoration Ecology 3 cr. Offered spring. Prereq., junior or senior standing and NRSM 265 (FOR 265) and one 300-400 level ecology courses: BIOE 370, BIOE 428, BIOE 447, BIOE 448 (BIOL 340, 366, 447, or 448), FORS 330 (FOR/RSCN 330), or NRSM 462 (FOR/RSCN 462). This course covers the primary ecological theories that inform the practice of ecological restoration. Topics include the dynamic nature of ecological systems, community assembly, biodiversity and ecosystem functioning food web dynamics, ecological engineering, macroecology, and statistical issues and study design.

U 370S (RSCN 370S) Wildland Conservation Policy and Governance 3 cr. Offered autumn and spring.

Examination of the historical, philosophical, and legislative background for development and management of our national system of wilderness areas, wild and scenic rivers, trails, and national parks; their place in our social structure.

U 371 (RSCN 371) Wilderness Issues Lecture Series 1 cr. (R-3) Offered spring. Explores current issues in wilderness preservation, management and research.

U 373 (RSCN 373) Wilderness and Civilization 3 cr. (R-6) Offered autumn and spring. Social and cultural perspectives on the wilderness idea and wildland practices. Course topics include history of wilderness and the wilderness movement, various philosophical viewpoints on wilderness, protected area management issues, and how wilderness fits into larger landscapes and societies.

U 374 (RSCN 274) Yellowstone Studies 1 cr. Offered spring. Ecological and sociopolitical perspectives on the greater Yellowstone ecosystem. Topics include winter ecology, biodiversity conservation, national park planning and management, winter recreation, fire, and wildlife. Field course in the Yellowstone area.

U 379 (FOR 379) Collaboration in Natural Resources Decisions 3 cr. Offered intermittently. Political and social processes affecting natural resource decisions. Examination of cases of multi-party collaboration in forestry, range, and watershed management issues.

U 380 (RSCN 380) Environmental Conservation 3 cr. Offered autumn. Prereq., junior standing. The interrelationships of resource conservation problems and programs; management and conservation in the context of an expanding economy

U 385 (for/RSCN 385) Watershed Hydrology 3 cr. Offered autumn and spring. Prereq., M 115 or M 121 or M 122 or M 151 or M 162 or M 171 or M 172 (MATH 117, 111, 112, 121, 150, 152, or 153). An introduction to physical and biological controls over water movement and storage in the environment, and how those controls are affected by land management practices.

U 386 (FOR 386) Watershed Hydrology Laboratory 1 cr. Offered autumn and spring. Coreq., NRSM 385 (FOR 385) or consent of instr. An introduction to basic watershed measurement and analysis techniques. Lab exercises designed around the use of spreadsheets and computer graphics.

U 398 (RSCN 398) Internship Variable cr. Offered every term. Prereq., consent of department. Extended classroom experience that provides practical application of classroom learning during placements off campus. Prior approval must be obtained from the faculty supervisor and the Internship Services office. A maximum of 6 credits of Internship (198, 298, 398, 498) may count toward graduation.

U 404 (FOR 404) Wilderness in the American Context 4 cr. An expansive treatment of the history of the wilderness preservation movement in the United States. Introduction to the successive influences of philosophy, science, art and politics on society's relationship with wilderness. Discussion of the Wilderness Act of 1964.

U 405 (FOR 405) Management of the Wilderness Resource 4 cr. An ecology-based treatment of wilderness management. Brief overview of fundamental ecological principles followed by an examination of their specific and often unique applications to wilderness ecosystems. Presentation of basic wilderness management principles and guidelines. Discussion of nonconforming wilderness uses.

U 406 (FOR 406) Wilderness Management Planning 3 cr. Exploration of basic planning theory, concepts, effective plan writing, and the characteristics of successful planning and implementation. In-depth treatment of the Limits of Acceptable Change planning framework. Comparison and evaluation of the different planning approaches used by the four wilderness managing agencies.

UG 408 (FOR 408) Global Cycles and Climate 3 cr. Offered spring even-numbered years. An analysis of the earth's major global biogeochemical cycles with a focus on the ways and extent to which each of them influences and

interacts with the global climate system.

UG 410 (FOR 410) Soil Morphology 3 cr. Soil Morphology, Genesis and Classification 3 cr. Offered spring odd-numbered years. Prereq., ENSC 245N (FOR 210N). The morphological characteristics of soils, how the horizons formed and an introduction to the Soil Taxonomy classification system used in this country. Field trips will be included.

UG 415 (FOR 415) Environmental Soil Science 3 cr. Offered spring odd-numbered years Prereq., ENSC 245N (FOR/RSCN 210N) or consent of instr. A detailed analysis of the physical, chemical and biological properties of soils and how they function, with a focus on soil processes and how they affect, and are affected by human activities. Specific topics include element cycling, water quality, the effects of environmental change soil biogeochemistry, plant-soil interactions, and the consequences of large-scale disturbances on soil processes.

UG 422 (RSCN 422) Natural Resources Policy and Administration 3 cr. Offered autumn and spring. Policy formation in the United States and a survey of the major resource policies interpreted in their historical and political contexts.

UG 424 (RSCN 424) Community Forestry and Conservation 3 cr. Offered spring. Co-convened with NRSM 424. In-depth examination of the history, theory and management issues faced in community-driven forestry and conservation in the United States and abroad. Cannot get credit for both NRSM 424 and NRSM 524.

UG 425 Natural Resource and Environmental Economics 3 cr. Offered alternate spring. Prereq., ENSC 201S or FORS 320 (FOR 320); and M 115, M 121, M 122, M 151, M 162, M 171, or 172 (MATH 117, 111, 112, 121, 150, 152, or 153). Introduction to analytical approaches for economic analysis of management of non-renewable resources, fisheries, forests, threatened and endangered species, and the atmosphere.

U 444 (FOR 444) Ecological Restoration Capstone 5 cr. Offered spring. Prereq., junior or senior standing and successful completion of NRSM 265 (FOR 265) and one advanced ecology course: BIOE 370, BIOE 428, BIOE 447, BIOE 448 (BIOL 340, 366, 447, 448), FORS 330 (FOR/RSCN 330), or NRSM 462 (FOR/RSCN 462); and completion or concurrent enrollment in NRSM 365. This service-learning course teaches students about designing and implementing restoration and monitoring projects. The course includes lectures, labs, and hands-on experience working with ecologists and restoration practitioners from local government agencies, NGOs, or other organizations.

UG 449E (RSCN 424) Climate Change Ethics and Policy 3 cr. Same as CCS 449E. Offered Spring. This course focuses on the ethical dimensions of climate change policy. It will cover the following major topics: (1) climate change, personal and collective responsibilities, (2) ethics, climate change and scientific uncertainty, (3) distributive justice and international climate change negotiations, (4) intergenerational justice and climate change policy.

UG 455 (FOR/RSCN 455) Riparian Ecology and Management 3 cr. Offered spring. Prereqs., successful completion or concurrent enrollment in NRSM 385 (FOR 385/RSCN 385) and completion of one of the following introductory ecology courses: BIOE 172 (BIOL 121N), BIOE 370 (BIOL 340), BIOE 428 (BIOL 366), BIOE 447 (BIOL 447), BIOE 448 (BIOL 448), FORS 330 (FOR/RSCN 330), or NRSM 462 (FOR/RSCN 462). Importance of riparian/wetland areas and the complexities associated with their management for short and long term benefits.

UG 460 (RSCN 460) Range Inventory and Analysis 3 cr. Offered intermittently. Prereq., NRSM 360 (FOR/RSCN 360) and STATS 216 (MATH 241), FORS 201 (FOR 201), SOCI 202 (SOC 202), WILD 240 (WBIO 240) or PSYX 222 (PSYC 220). Methods of measuring range and shrub-land vegetation at individual and community level for determining plant composition, changes following treatments, and carrying capacity of range livestock and native ungulates.

UG 462 (FOR/RSCN 462) Range Ecology 3 cr. Offered intermittently. Prereq., junior standing consent of instr. Applied ecology of rangeland uses by various biota, synecological response to grazing, fire, herbicides, fertilizers and mechanical treatments, structural and functional responses of grassland systems to disturbance.

UG 463 (FOR/RSCN 463) Range Improvement 3 cr. Offered intermittently. Prereq., NRSM 360 (FOR/RSCN 360). Methods of improving rangelands, including grazing systems, control of weeds, controlled burning, seeding, fertilization and mechanical soil treatments.

UG 475 Environment and Development 3 cr. Offered spring. Examines key social forces that influence how individuals, groups and nation-states understand and live within their bio-physical environments, especially policies and processes relating to development, corporate capitalism, globalization, culture, class and other forms of power and social relations. Pays close attention to ways both indigenous and introduced resource use and management practices (including conservation) variably impact people of different races, classes, genders, cultures and livelihood practices.

UG 485 (RSCN 485) Watershed Management 3 cr. Offered autumn. Prereq., NRSM 385 (FOR 385/RSCN 385) or consent of instr. Effects of land management practices on water and sediment yields from wildland watersheds. Introduction to statistical methods in hydrology. Introduction to water yield and sediment modeling techniques.

UG 489E (FOR 489E) Ethics Forestry & Conservation 3 cr. Offered intermittently. Prereq., lower division course in Perspective 5 or consent of instr.; senior standing. Theoretical and practical ethical issues affecting the management of natural resources in national forests and on other public lands.

U 494 (FOR 494) Seminar in Ecological Restoration 1 cr. Offered spring. Prereq., senior standing and successful completion or concurrent enrollment in NRSM 495 (FOR 445); and consent of instr. This seminar provides a forum for students to share the results of practicum projects conducted in NRSM 495 (FOR 445). Each student will lead at least one seminar during the semester.

U 495 (FOR 445) Ecological Restoration Practicum 3-6 cr. (R-6) Offered every semester. Prereq., senior standing in the WLR major and successful completion of NRSM 444 (FOR 444), a faculty-approved practicum proposal; and consent of instructor. The goal of this service-learning practicum is for students to gain real-world experience in the practice of ecological restoration. Students will implement aspects of a restoration or monitoring plan for a local management agency, organization or other sponsor.

U 499 Senior Thesis 1-3 cr. (R-3) Offered autumn and spring. Prereq., senior standing and consent of instr. Preparation of a major paper based on study or research in a field selected according to the needs and objectives of the student.

G 501 (FOR 501) Research Methods 3 cr. Offered autumn. Prereq., a course in statistics or consent of instr. The nature of scientific research, planning research projects, organization and presentation of research results. Emphasis on the development of study plans for specific research projects.

G 511 (FOR 511) Soil Chemistry 3 cr. Offered spring odd-numbered years. Prereq., ENSC 245N (FOR 210N/RSCN 210N), FORS 330 (FOR 330/RSCN 330). A series of lectures on soil chemistry in the beginning of the semester, emphasizing water and nutrient movement, followed by a series of laboratory and lecture classes on soil chemistry, emphasizing data interpretation and problem solving.

G 513 (RSCN 513) Foundations of Natural Resource Conflict Resolution 3 cr. Offered autumn. Same as ENST 513 (EVST 513) and LAW 613. Examines the basic framework for preventing and resolving natural resource and environmental conflicts in America. Reviews the history of alternative approaches, emphasizes the theory and practice of collaboration, and considers future trends. This highly interactive course uses lectures, guest speakers, case studies, and simulations.

G 515 Environmental Negotiation & Mediation 3 cr. Same as COMM 515 and ENST 515. This course prepares students to effectively engage in multiparty negotiation on natural resource and environmental issues. It is grounded in theory and provides an opportunity to develop practical skills in both negotiation and facilitation/mediation. Guest speakers, case studies, and simulations allow students to develop, test, and refine best practices. The course is face-paced, highly interactive, and serves as the second of three required courses in the Natural Resources Conflict

Resolution Program.

G 520 (FOR 520) Forest Resource Economics 3 cr. Offered autumn. Prereq., FORS 320 (FOR 320) or equiv., an upper-division or graduate level course in microeconomics, and consent of instr. The demand for, and supply of, commodity products from the forest, including characteristics of demand for stumpage, logs and processed products, forest management and harvesting decisions, and the supply of stumpage, intermediate and processed products.

G 524 Community Forestry and Conservation 3 cr. Offered spring. Co-convened with NRSM 424. In-depth examination of agroforestry, community forestry, and opportunities and constraints to the use of trees in rural development and protected areas management.

G 532 (FOR 532) Forest Ecosystem Analysis 3 cr. Offered autumn. Prereq., FORS 330 (FOR 330) or equiv. Current research on important processes in forest ecosystems, including carbon, water and nutrient cycles, with emphasis on recent computer simulation models.

G 560 (RECM 560) American Wilderness Philosophy and Policy 4 cr. (FOR 560). History of the American Wilderness idea and associated policies, including the Wilderness Act and implementing regulations. Current management challenges also covered.

G 561 (RECM 561) Managing Wilderness Ecosystems 4 cr. (FOR 561). Ecosystem science and policies and management practices related to managing specific resources, such as air, wildlife, and water, within wilderness. Management of non-conforming uses is also covered.

G 563 (RECM 563) Wilderness Planning 4 cr. (FOR 563). Planning theory and effective plan development, including principles and practices of public involvement. Includes examination of primary planning frameworks.

G 565 (RSCN 565) Advanced Problems in Restoration Ecology 3 cr. Offered intermittently. Prereq., graduate standing and consent of instructor. This is a student-driven course that explores current topics in the theory and practice of restoration. Students will develop and implement a collaborative research project related to a current problem in restoration ecology or ecological restoration.

G 570 (RSCN 570) Political Ecology 3 cr. Graduate seminar on key theories, issues and literature in the subfield of Political Ecology, an interdisciplinary environmental social science approach which integrates how political, economic, cultural and ecological processes interact and shape society nature relations. Case examples are drawn from both the North and South.

G 571 (RSCN 571) International Conservation and Development 3 cr. Offered spring. Prereq., graduate standing. Critical review of selected international natural resource development, conservation and management approaches and experiences.

G 575 Environment and Development 3 cr. Offered spring. Co-convened with NRSM 475. Examines key social forces that influence how individuals, groups and nation-states understand and live within their bio-physical environments, especially policies and processes relating to development, corporate capitalism, globalization, culture, class and other forms of power and social relations. Pays close attention to ways both indigenous and introduced resource use and management practices (including conservation) variably impact people of different races, classes, genders, cultures and livelihood practices.

G 579 (RSCN 579) Practicum Natural Resources Conflict Resolution 3 cr. (R-4) Offered every semester. Same as ENST 579 (EVST 579) and LAW 679. Prerequisite, ENST 513 (EVST 513) or consent of instructor. Designed as the capstone experience of the Natural Resources Conflict Resolution Program. Provides practical experience in multi-party collaboration and conflict resolution. Students may design their own project in consultation with the director of the NRCR Program, or participate in a project organized and convened by faculty. Projects may be conducted year-round.

G 582 (FOR 582) Tropical Ecosystems and Management 3 cr. Offered spring. Prereq., graduate standing or

consent of instr. Introduction to tropical forests and agroecosystems, and a critical examination of their management and conservation within the context of ecological, socioeconomic and political change.

G 586 (FOR 586) Snow Hydrology 3 cr. Offered spring. Prereq., graduate standing or consent of instr. The physics of snow formation, distribution and ablation. Snow and forest management in the subalpine zone.

G 594 Graduate Seminar Variable 1-2 cr. (R-12). Offered intermittently. Prereq. graduate standing. Presentations by student, faculty, and associates on issues and topics in their field.

G 595 (RSCN 595) Special Topics Variable 1-12 cr. (R-12) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one time offerings of current topics.

G 596 (RSCN 596) Independent Study Variable 1-12 cr. (R-12) Offered every term. Prereq., consent of instr. Individual study or research problems.

G 597 Graduate Research Variable 1-15 cr. (R-15) Offered every term. Independent graduate research in forest management, wood science, soils, wildlife management, silviculture, recreation and other topic areas.

G 598 Internship Variable 1-2 cr. (R-12) Offered every term. Practical application of academic learning in an off-campus placement. Prior approval must be obtained from faculty supervisor.

G 599 Professional Paper Variable 1-15 cr. (R-15) Offered every term. Professional paper preparation.

G 622 (FOR 622) Advanced Problems in Environmental Policy 3 cr. Offered spring even-numbered years. Examines environmental policy problems and contemporary issues in environmental policy, law, and administration. Policy tools, concepts and research resources introduced. Numerous problems, themes, and issues in environmental policy analyzed. Readings-based seminar; students lead most reviews and discussions.

G 697 Research Variable 1-15 cr. (R-15) Offered every term. Independent graduate research in forest management, wood science, soils, wildlife management, silviculture, recreation and other topic areas.

G 699 Thesis Variable 1-15 cr. (R-15) Offered every term. Thesis/dissertation preparation.

Parks, Tourism & Recreation Management (PTRM)

U 110S (RECM 110S) Introduction to Parks, Recreation and Tourism 3 cr. Offered autumn and spring. The basic motivations and socio-economic determinants of recreation needs and preferences. History of the development of the resources base, trends in user participation, classification of recreation lands, recreation opportunities and needs, management objectives, economics of outdoor recreation, and definitions of leisure and recreation.

U 191 (RECM 195) Special Topics Variable cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 210 (RECM 210) Nature-Based Tourism 3 cr. Offered autumn. Introduction to the tourism and commercial recreation industries. Provides initial link between the natural environment and business operations. Combination of introductory business philosophies, economics, and natural resource management into a framework for future reference and course work.

U 217S (RECM 217S) Wildland Recreation Management 3 cr. Offered autumn and spring. The management of land as an environment for outdoor recreation. Understanding the relationship between the visitor, resource base and management policies. Recreation planning on multiple use forest lands, parks, wilderness areas and private lands.

U 230 (RECM 230) Programming in Recreation 3 cr. Offered autumn. Principles of program planning for organized offerings in recreation. Selection, adaptation and evaluation of activities.

U 291 (RECM 295) Special Topics Variable cr. (R-6) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 300 (RECM 300) Recreation Behavior 3 cr. Offered autumn. Prereq., PTRM 217S (RECM 217S). This course provides an understanding of recreation behavior in wildland and nature-based tourism oriented settings. Students will learn about theories/conceptual frameworks from social and environmental psychology and their application to visitor management issues in the wildland recreation and nature-base tourism fields.

U 310 (RECM 310) Natural Resources Interpretation 3 cr. Offered autumn. Prereq., COMM 111A or THTR 120A (DRAM 111A), junior or senior standing. Principles, concepts, techniques essential to providing high quality interpretive programs in natural or cultural history.

U 345X (RECM 345) Sustaining Human Society and the Natural Environment 3-6 cr. Offered Winter and Summer. These field-based, experiential classes focus on the environmental and conservation concerns, as well as the modern and traditional cultures, of Australia, New Zealand, or Fiji.

U 353 (RECM 353) Tourism and Sustainability in the Himalaya 3 cr. Offered summer only. Coreq. NRSM 352. In this course we will explore the opportunities and challenges of development with particular reference to nature-based tourism and sustainability in an isolated but rapidly globalizing region of the Himalaya. Students will learn through extensive readings, class discussions, direct field experience (including living in a remote mountain village), meetings with development officials, sustainability activists and stakeholders in the region.

U 355 Wilderness Medicine and Risk Management 5 cr. This course will train students in injury and illness prevention in a backcountry setting while emphasizing risk management principles. The course also trains students in the treatment and long-term management of medical emergencies in the backcountry, including improvised litters and splints. Instructors cover decision making involved in dislocation reduction, medication administration, and evacuation protocols. Risk management topics include participant screening, emergency response plans, risk matrices, and incident reporting. Co-requisites include HHP 332, Emergency Medical Technician and Incident Management; and PTRM 356, Wilderness Rescue and Survival Skills.

U 356 Wilderness Rescue and Survival Skills 5 cr. This course is ideal for outdoor leaders involved in extended backcountry trips and those individuals seeking employment with search and rescue units, ski patrols and wilderness trip leading organizations. Students will be prepared to handle emergencies in high-elevation, winter conditions as well as in tropical and swiftwater environments. They will also be prepared for extended care of patients and rescuers in remote and challenging environments. Students will study navigation including landform interpretation of maps and use of map rulers to determine lat/long and UTM coordinates, as well as practical use of maps, compass and GPS. The course includes 3 days of Swiftwater Rescue training, as well as 3 days of Level I Avalanche training. An overnight, winter rescue scenario typically in conjunction with Missoula County Sheriff's Search and Rescue team, as well as training in rescue helicopter operations with St. Patrick Hospital's LifeFlight medics, complete the suite of practical experiences. Co-Requisites include HHP 332, Emergency Medical Technician and Incident Management; and PTRM 355, Wilderness Medicine and Risk Management.

U 380 (RECM 380) Recreation Administration and Leadership 4 cr. Prereq., PTRM 110S (RECM 110S) and junior or senior standing, or consent of instr. Personnel, leadership, finance, facilities, programs and public relations. Coordination with youth serving institutions, government agencies, and private or commercial organizations

U 391 (RECM 395) Special Topics Variable cr. (R-12) Offered intermittently. Experimental offerings of visiting professors, new courses, or one-time offerings of current topics.

U 392 (RECM 396) Independent Study 1-6 cr. (R-6) Offered every term.

U 398 (RECM 398) Internship Variable cr. Offered every term. Prereq., consent of instr. Extended classroom experience which provides practical application of classroom learning during placements off campus. Prior approval must be obtained from the faculty supervisor and the Internship Services office. A maximum of 6 credits of Internship (198, 298, 398, 498) may count toward graduation.

U 407 (RECM 407) Managing Recreation Resources in Wilderness 3 cr. Examination of strategies to

management recreation in a wilderness setting. Addresses management of visitor use and experiences, measuring and monitoring biophysical and social impacts, effective education and interpretation, and law enforcement.

UG 418 (RECM 418) Winter Wilderness Field Studies 3 cr. Examination of wilderness values, management issues and strategies, winter ecology and snow science, risk management and group leadership, and traditional skills. Winter field course in the Swan Valley and Mission Mountains Wilderness. Offered wintersession.

U 450 (RECM 450) Pre-Practicum Professional Preparation 1 cr. Offered spring. A pre-practicum class to provide orientation for the practicum, PTRM 495 (RECM 460).

U 451 (RECM 451) Tourism and Sustainability 3 cr. Offered spring. Prereq., PTRM 210 (RECM 210), or consent of instructor. Theories and conceptual models are applied to analyzing relationships between the integration of planning theories to sustainability concepts.

UG 481 (RECM 481) Managing Wildland Resources and Visitors 4 cr. Offered autumn. Prereq., PTRM 217S (RECM 217S). Balancing the needs of people for recreation with the impact of recreational use.

UG 482 (RECM 482) Wilderness and Protected Area Management 3 cr. Offered autumn. Prereq., PTRM 217S (RECM 217S), or consent of instructor. Examination of the origin, evolution, and application of the park concept on state, federal, and international levels. Evaluation of legislation, philosophy, and policy leading to consideration of goals, objectives, and strategies for wilderness and protected area management.

UG 483 (RECM 483) Commercial Recreation, Marketing and Tourism 3 cr. Offered autumn. Prereq., ACTG 201 (ACCT 201) and BMKT 337 (MKTG 362). Interactions between wildland recreation areas and the private sector are reviewed. Linkages between natural resources and the tourism industry are discussed. Principles of marketing for the private sector within this context are presented.

U 484 (RECM 484) Parks, Tourism & Recreation Management Field Measurement Techniques 3 cr. Offered autumn. Co-req. with either PTRM 485 or PTRM 451. Field measurement and management techniques critical in park, tourism & recreation management. Includes measurement of impacts on biophysical and social attributes of park, tourism & recreation settings.

UG 485 (RECM 485) Recreation Planning 4 cr. Prereq., PTRM 217S and PTRM 300 (RECM 217S, RECM 300). Offered autumn. Needs of recreation opportunities and response to those needs through planning, demand assessment and resource analysis.

UG 491 (RECM 495) Special Topics Variable cr. (R-12) Offered intermittently. Experimental offerings of visiting professors, new courses or one-time offerings of current topics.

U 492 (RECM 496) Independent Study Variable cr. (R-6) Offered every term. Prereq., consent of instr. Individual study of research problems.

UG 495 (RECM 460) Practicum in Parks, Tourism & Recreation Management 1-15 cr. (R-15) Offered every term. Prereq., PTRM 380 (RECM 380), PTRM 450 (RECM 450), senior standing, and consent of instr. Supervised pre-professional practice in approved parks, tourism & recreation management agencies.

UG 498 (RECM 498) Internship Variable cr. Offered autumn and spring. Prereq., consent of instr. Extended classroom learning during placements off campus. Prior approval must be obtained from faculty advisor and Internship Services office. A maximum of 6 credits of Internship (198, 298, 398, 498) may count toward graduation.

U 499 (RECM 497) Senior Thesis 1-3 cr. (R-6) Offered autumn and spring. Prereq., consent of instr.; senior standing. Preparation of major paper based on study or research of a topic selected with an advisor according to needs and objectives of student.

G 500 (RECM 500) Conservation Social Science Methods 3 cr. Offered autumn. Prereq., a course in statistics or