

2009-2010 Course Catalog

The University Of Montana

Environmental Studies

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Len Broberg, Director

The Environmental Studies Program (EVST) seeks to provide students with the literacy, skills and commitment needed to foster a healthy natural environment and to create a more sustainable, equitable, and peaceful world. To these ends, the EVST program educates and challenges students to become knowledgeable, motivated, and engaged in environmental affairs. We want our students to acquire the skills and awareness that will enable them to promote positive social change and to improve the environment and communities of Montana and thereby the lives of all Montanans. Our program is organized upon the following principles:

- -Environmental studies require an interdisciplinary approach that integrates the natural sciences, social sciences, and humanities.
- -Creating solutions to environmental problems requires enterprise and performance as well as reflection; therefore, an effective environmental education generates thinkers who can do as well as doers who can think.
- -It is important to provide both classroom and experiential learning opportunities in the arts and responsibilities of democratic citizenship, including communication, collaboration, and committed civic participation.
- -Students should be co-creators of their educational experience.

High School Preparation: Students in high school who are planning to major in environmental studies should take their schools' college preparatory curriculum. Courses in biology, chemistry, math through pre-calculus, and writing are recommended.

Special Degree Requirements

Refer to graduation requirements listed previously in the catalog (see index). For the Bachelor of Arts degree, every major in environmental studies will complete the following requirements: Environmental Studies: EVST 101N, 167H, 201, 225, 360, 398, one of the following two courses, 302 or 367 and one of the following two courses 305L or 420 and at least 12 credits selected from 300 and/or 400 level courses offered by EVST. Required courses outside Environmental Studies: BIOL 100N or 110N or 108N; CHMY 121N (CHEM 151N); STAT 216 (MATH 241), and one, 3 credit NAS course from among the following: 100H, 231, 301E, 303E, 324, 329, 341, 342 or 410 or NASL 201X, 202L (NAS201H, 202). The Upper-division Writing Expectation must be met by

successfully completing an upper-division writing course from the approved list in the Academic Policies and Procedures section of this catalog. See index.

Focus Areas of Study

Students are encouraged to select a minor or double major from another campus discipline or to focus in one of the following areas of study: Sustainable Business: Students focus on creating and maintaining enterprises that meet social needs sustainably. In addition to satisfying the general requirements for a degree in environmental studies, students should take EVST 210, Sustainable Business Practices or BUS 160S, Issues in Sustainability; EVST 485, Environmental Citizenship or 487, Globalization, Justice and Environment; COMM 379, Communication, Consumption, and Climate; ACTG 201, 202 (ACCT 201, 202) Principals of Financial Accounting and Principals of Managerial Accounting; MIS 257 Business Law; MGMT 457 Entrepreneurship for Non-Business Majors. Students should also intern with a local sustainable business or the Sustainable Business Council. Students interested in this focus area are encouraged to double major in Business Management and in addition to the core Business courses take some of these courses: MGMT 348, Entrepreneurship; MGMT 430, Business Negotiations; MGMT 445, Small Business Management and Strategic Planning; MGMT 446, Strategic Management; MGMT 458, Advanced Entrepreneurship Seminar.

Environmental Writing and Literature: In addition to satisfying the general requirements for a degree in environmental studies, students desiring to focus in this area must complete EVST 305L, The Environmental Vision and EVST 373, Nature Works; at least one 3 credit course at the 200-level or above in either ENCR or LIT or JOUR; at least either one, 3 credit internship (*Camas* magazine, the Environmental Writing Institute, *Wild Mercy* reading series, or some other environmental publication; or one independent study credit (EVST 496, arranged with instructor) in either original nature writing or in nature literature study.

Pre-Law: In addition to satisfying the general requirements for a degree in environmental studies, students desiring to focus in environmental law must consult with the pre-law faculty advisor within environmental studies to design a suitable pre-law program. The pre-law study area is a flexible program designed to prepare students for law school and allow students to strengthen their background within their area of interest.

Sustainable Food and Farming: In addition to satisfying the general requirements for a degree in environmental studies, students desiring to focus in this area must complete: 6 supervised internship credits in the Program in Ecological Agriculture and Society (PEAS, EVST 390); EVST 430, Culture and Agriculture; and EVST 450, Food, Agriculture and Environment. In addition, students must complete 9 credits of advisor-approved courses or internships. These could include such courses as: FOR 210N, Introductory Soils, 362 Range Livestock Production, 424 Community Forestry Conservation; HHP 236N Nutrition; BMED 324 Medicinal Plants; ANTH 103 Food and Culture.

Water Resources: In addition to satisfying the general requirements for a degree in environmental studies, students desiring an emphasis in water resources must complete 20 credits of advisor-approved courses or internships. These could include such courses as BIOL 308, Biology & Management of Fishes; 366, Freshwater

Ecology; 408, Advanced Fisheries Science; 415, Field Methods in Fisheries Biology and Management; 453 & 454, Lake & Stream Ecology at the Flathead Lake Biological Station; CHMY 442 (CHEM 442), Aquatic Chemistry; FOR 210, Soil Science; 385 & 386 Watershed Hydrology & Lab; 415, Environmental Soil Science; 455 Riparian Ecology Management; 485, Watershed Management; GEO (GEOS) 260, River Systems, 301 Environmental Geology; 320 Global Water; 327, Geochemistry; 460, Process Geomorphology; 420 Hydrogeology; GPHY (GEOG) 335 Water Policy. Note: Some of these courses require prerequisites not in the environmental studies core requirements. Students can also work with the UM Watershed health Clinic.

Sustainability Studies: With this focus area, students will increase their understanding of our earth's limited capacity to support all forms of life and to provide for the needs of human society. Students will learn how to reduce our demands on the earth through increased resource efficiency and choosing simpler but more joyful lifestyles. Students have the opportunity to identify and develop more sustainable means of providing food, shelter, mobility and other necessities. The focus puts students into the community to learn and to innovate. Students pursuing this focus area must complete 20 credits of advisor-approved courses or internships. These could include courses such as: EVST 204, Sustainable Technology Applications; 210, Sustainable Business Practices; 390, PEAS Internship, Sustainable Agriculture Education Practicum; COMM 379, Communication Consumption and Climate; and the energy related courses offered by the College of Technology such as NRG 101-102, Energy System I & II; 213, Power Systems Technology; 191, Energy Practicum; 242, Solar and Wind Systems; or 241, Alternative Fuels.

Environmental Justice: With this focus area students will develop the capacity for thoughtful active participation in the quest for environmental and social justice. Students gain in-depth understandings of a wide range of environmental injustices and the role of race, class, and gender in shaping quality of life, enjoyment of environmental amenities and access to natural resources both domestically and internationally. Students learn about the ways that business, government, financial institutions, and the labor and environmental movements can work toward a more just and sustainable society. In addition to satisfying the general requirements for a degree in environmental studies, students desiring to focus in this area must complete 21 credits including the following: EVST 477S Environmental Justice Issues and Solutions/Service Learning, 487 Globalization, Justice, and the Environment; 398 Internship (3 credits) and 12 credits of advisor-approved electives (contact the EVST office for a list of recommended courses).

Suggested Course of Study

First Year	A	S
BIOL 100N The Science of Life 3	-	-
WRIT 101 (ENEX 101) Composition (3)	(3)	(3)
EVST 101N Environmental Science 3	-	-
EVST 167H Nature and Society -	3	3

M 115 (MATH 117) Probability and Linear Mathematics	-		3	
UNC 180 Environmental Studies Freshman Interest Group Seminar	1		-	
Elective and General Education	6-9		7-10	
Total	16		16	
Second Year		A		S
CHMY 121N (CHEM 151N) General and Inorganic Chemistry	3		-	
EVST 201 Environmental Information Resources	-		3	
EVST 225 Community and Environment	3		-	
STAT 216 (MATH 241) Statistics	4		-	
Electives and General Education	6		12	
Total	16		15	
Third Year		A		S
EVST 302 Introduction to Environmental Regulation	-		3	
EVST 360 Applied Ecology	3		-	
EVST 367 Environmental Politics and Policies	3		-	
EVST 420 U.S. Environmental Movement	3		-	
EVST upper-division courses	3		3	
Electives and General Education	3		9	
Total	15		15	
Fourth Year		A		S
EVST upper-division course	3		-	
EVST 398 Cooperative Education	3		-	
Electives and General Education	8		14	
Total	14		14	

Requirements for a Minor

To earn a minor the student must complete 25 credits. The following courses must be completed: EVST 101N, 167H, 225 and one of these ecology courses: BIOL 121N, EVST 360, FOR 330, or BIOL 340. The remaining credits can be from any other upper-division EVST courses.

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.

Environmental Studies (EVST)

U 101N Environmental Science/Service Learning 3 cr. Offered autumn. Provides students with opportunities to use class knowledge to make a difference; helps students build all of the following: scientific literacy; skills in critical thinking, research and self-instruction; provides an understanding of the scientific basis of environmental issues, policies and laws; encourages habits of sustainable living, scientifically-informed, active participation in social decisions, and service to their community and to the earth.

U 167H Nature and Society 3 cr. Offered spring. The relationship between ideas about nature and the development of political and social ideas, institutions, and practices, primarily in western (Euro-American) society. Complements ethics offerings in philosophy aimed at environmental studies majors.

U 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 201 Environmental Information Resources 3 cr. Offered spring. Students learn how to find, evaluate and use existing information to increase understanding of environmental issues and resolve controversies. Students will: research a subject, using a variety of sources (referred literature, government sources, internet sources, interviews); evaluate sources critically; write a literature review and give an oral presentation on their topic. Focus is on critical thinking and dealing with the information explosion.

U 204 Sustainable Technology Applications 2 cr. (R-4) Offered intermittently autumn or spring. Prereq., EVST 167H. Review of the concept of sustainability in the context of the current American economic system and the extant applications of sustainability principles to private enterprise.

U 210 Sustainable Business Practices/Service Learning 3 cr. Offered Spring. Same as MGMT 210. Examination of the social and environmental responsibilities of business within a free-market system. Explores alternative models for organizational and economic development and focuses on sustainability-driven innovation as a strategic option for organizations.

U 225 Community and Environment 3 cr. Offered autumn. Same as SOCI 225 (SOC 225). Exploration of the ways that communities address their environmental concerns. Introduction of relevant social science concepts.

U 282 Field Skills for Conservation Work 3 cr. Coreq. EVST/RSCN 382, EVST/RSCN 383. Offered autumn by Northwest Connections. Via backcountry travel and hands-on field application, proficiency gained in wilderness first aid; natural history field journal techniques; navigation using map, compass, and GPS; collecting and recording scientific field data in remote settings; minimum impact camping and travel; backcountry preparedness; and basic woodsman skills.

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

U 295 Special Topics Variable cr. (R-9) Offered intermittently. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 302 Introduction to Environmental Regulation 3 cr. Offered spring. Introduction to the history, law and theory of environmental regulation in the United States using public and private land regulation mechanisms as case studies. Basic principles of constitutional and administrative law relevant to environmental regulation, substantive public and private land use law and the history of environmental problems and their regulation.

U 305L The Environmental Vision 3 cr. Offered autumn. Provides background, overview, interpretations, and understanding of key concepts, themes, approaches, and forms in American nature and environmental nonfiction as well as that literature's response to and influence on environmental events, figures, and movements.

U 311 Field Studies in Human/Ecological Communities and Public Land Issues 2-3 cr. (R-12) Offered every term. Via extended backcountry travel, experiential examination of cultural history and public lands management, and how those affect ecosystem integrity. Investigation of personal roles in and relationships with human and ecological communities. Offered by the Wild Rockies Field Institute.

UG 360 Applied Ecology 3 cr. Offered autumn. Prereq., BIOL 100N, CHMY 121N (CHEM 151N), EVST 201, STAT 216 (MATH 241). Understanding the principles and concepts of ecology and how they inform real life decisions about human interactions with the environment. Emphasizes the science of sustainability and the conservation of watersheds and biodiversity.

UG 367 Environmental Politics and Policies 3 cr. Offered autumn. Foundation in public lands history, bedrock environmental laws, policy processes and institutions. Research and analysis of current environmental and natural resource policy issues. Focus is domestic illustrated by case studies.

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

U 373A Nature Works 3 cr. Offered spring. Prereq., consent of instr. Writing workshop for the creation, critique, and revision of essays about the environment to include natural history, personal narrative, science interpretation, advocacy/editorial, place-based essay, and others. Examination of concepts, forms, and approaches to writing about environmental concerns, awareness and sensitivity. Reading and responding to published work, primarily from the perspective of technique and approach.

U 377 Rhetoric, Nature and Environmentalism 3 cr. Offered intermittently. Same as COMM 377. Survey of rhetorical texts that shape public understanding of nature and environmental issues. Analysis of a range of historical and contemporary environmental texts using theoretical concepts from the rhetorical tradition.

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

U 382 Biogeography of Northwest Montana 3 cr. Coreq., EVST/RSCN 383, EVST/RSCN 282. Offered each autumn by Northwest Connections. Examines drivers of biodiversity in northwestern Montana. Starting with basic natural history of native flora and fauna, students learn to identify various biotic communities and their distribution. Emphasizes how geology, topography, fire ecology, climate change, and human settlement influence biogeography.

U 383 Conservation & Community Research Project 3 cr. Coreq., EVST/RSCN 382, EVST/RSCN 282. Offered each autumn by Northwest Connections. Students pursue a project of their own design relating to conservation and rural issues.

U 390 Supervised Internship PEAS 2 cr. (R-8) Offered every term. Summer intensive, 6 cr. Students learn small scale sustainable vegetable farming in a hands-on work environment at the PEAS farm (15 minute bike ride from campus). Lectures, readings and reflection inform the work. Summer students also visit local farms on once-a-week field trips. PEAS is repeatable, as the curriculum changes across the season, and students can attend any semester, though the 6 credit summer intensive course is the heart of the program.

U 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 398 Internship Variable cr. Offered autumn and spring. Prereq., six credits in EVST and consent of instr. Practical application of classroom learning through internship with governments, organizations or industry. A maximum of 6 credits of Internship (198, 298, 398, 498) may count toward graduation.

UG 410 Environmental Justice in Latin America 3cr. Offered summer. Two week travel seminar to one or more Latin American countries to examine Latin American perspectives on environmental justice and efforts toward sustainable development within the context of the global economy and U. S. foreign policy. Required one-credit seminar offered spring semester to provide background readings.

UG 420 The U.S. Environmental Movement 3 cr. Offered autumn. Study of the environmental movement as a social movement. Examination of different approaches to environmental protection and restoration in view of the movement's historical roots and contemporary debates.

UG 427 Ethics and the Environment 3 cr. Offered autumn. Prereq., PHIL 202 or 300. Same as PHIL 427. Critical exploration of selected philosophical and literary texts pertinent to the ethics of human relationships with the natural environment.

U 430 Culture and Agriculture 2 cr. Offered spring, from start of semester to mid-April. Surveys treatment of farmers and farming in the humanities. Course covers specific agricultural crops and their effect on social and environmental history, artistic

commentary on agricultural life and farmer philosophy. Themes range from the tea and opium wars, to Wendell Berry's poetry to David Orr's philosophy.

UG 432 The Human Role in Environmental Change. 3 cr. Offered autumn even-numbered years. Prereq., upper-division standing or graduate standing. Same as GPHY 432 (GEOG 432). A systematic examination of the ways in which the major physical systems and ecosystems of the earth have been modified by human activity, and approaches to the rehabilitation of these systems.

UG 440 Environmental Economics 3 cr. Offered autumn. Prereq., ECNS 201S, 202S (ECON 111S, 112S) or consent of instr. Same as ECNS 433 (ECON 440). Outlines a theoretical framework for the analysis of environmental problems, including concepts of market failure and externalities, materials balance and property rights. The policy implications of this analytical model are explored for a range of topics including pollution and the preservation of natural environments and species.

UG 449 Climate Change Ethics and Policy 3 cr. Offered spring. Same as RSCN 449 and CSS 449. Course focuses on the ethical dimensions of climate change policy. Covers following majors topics: (1) climate change, personal and collective responsibilities, (2) ethics, climate change and scientific certainty, (3) distributive justice and international climate change negotiations, (4) intergenerational justice and climate policy.

UG 450 Food, Agriculture, and Environment 3 cr. Offered spring. Exploration of the premise that agricultural sustainability requires practices, policies, and social arrangements that balance concerns of environmental soundness, economic viability, and social justice among all sectors of society.

UG 460 Introduction to Alternative Energy 1 cr. Offered autumn, odd-numbered years. Survey of alternative technologies currently available to address energy problems and their environmental and economic impacts.

UG 465 Restoration Ecology 3 cr. Offered intermittently. Prereq., senior standing and a course in ecology. Same as FOR 465. Philosophy and practice of restoring damaged ecosystems. Restoration planning including improvement of degraded soils, site preparation for revegetation, and case studies.

UG 470 Appropriate Technology 1 cr. (R-2) Offered autumn even-numbered years/spring odd-numbered years. Problem assessment, project design, fund-raising and implementation of technical resource issues at the PEAS farm to gain practical skills in small scale community development projects, creative problem solving, and working in groups.

UG 477S Environmental Justice Issues and Solutions/Service Learning 3 cr. Offered autumn. Examination of social inequality in the distribution of environmental risks and in access to natural resources and environmental amenities.

U 484 Senior Capstone Project 3 cr. Offered intermittently. Prereq., senior standing in EVST. For seniors who want to design and perform a significant capstone project involving research and/or service. Students have responsibility for designing their projects which are subject to faculty approval. A final report and public presentation are required. Honors credit available.

U 485 Environmental Citizenship/Service Learning 3 cr. Offered spring. Prereq., open to juniors and seniors only or by consent of instructor. Same as CCS 485. Develops

environmental citizenship through student-initiated projects informed by principles of social marketing.

U 487 Globalization, Justice, and the Environment 3 cr. Offered spring. Study of current trends in economic globalization and its effects on efforts to work for social justice and environmental sustainability, particularly in the Global South. Examination of different models and theories of globalization, analysis of ethical issues raised, and assessment of alternatives proposed.

UG 494 Seminar Variable cr. (R-6) Prereq., EVST 101N or consent of instr. A seminar on a current environmental topic.

UG 495 Special Topics Variable cr. (R-9) Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

U 496 Independent Study 1-6 cr. (R-6) Offered autumn and spring.

G 501 Scientific Approaches to Environmental Problems 3 cr. Offered autumn. Prereq., graduate standing in EVST or consent of instr. The strength and limitations of the scientific approach to investigating and solving selected environmental problems with an emphasis on the natural sciences.

G 502 Environmental Law for Non-Lawyers 3 cr. Offered spring. Prereq., graduate standing. Review of major substantive environmental laws with an emphasis on areas of citizen involvement in the legal process.

G 504 Topics in Environmental Philosophy 3 cr. (R-9) Offered autumn and spring. Same as PHIL 504. Critical study/discussion of current (as well as benchmark) texts and issues in environmental ethics, environmental politics, and the philosophy of ecology, Interdisciplinary; open to concerned students from all disciplines.

G 505 The Literature of Nature Writing 3 cr. Offered spring. Study of nature, environmental, and place-based writing, from classical times to the present, with emphasis on the American tradition and its relationship to twenty-first century environmental concerns, challenges, and opportunities, and to the current practice of nature writing and natural history.

G 513 Natural Resource Dispute Resolution 3 cr. Offered spring. Same as LAW 613 and FOR 513. Provides a conceptual framework for understanding the history of ideas that have shaped the policies, institutions, and strategies used to resolve natural resource and other public policy conflicts in the American West. Focus on natural resource and environmental dispute resolution.

G 520 Environmental Organizing 3 cr. Offered spring. Developing understanding of and skills in community and environmental organizing. Emphasis on theory and practice of civic engagement and social change with a focus on developing and running campaigns and working in a group. Team projects.

G 521 Foundations in Environmental Education 3 cr. Offered autumn. Prereq., graduate standing in environmental studies. Same as C&I 521. Problem-solving approaches to environmental education; problem identification, research and design and implementation of an educational approach to selected environmental issues.

G 525 Teaching Environmental Science 1-3 cr. (R-6) Offered autumn and spring. Prereq., consent of instr. Same as C&I 525. Identification and examination of potential solutions to environmental problems and their impact on society. Major emphasis on teaching methods as they apply to environmental science.

G 531 Citizen Participation in Environmental Decision Making 3 cr. Offered spring. Review of the modes and methods of citizen participation in governmental and corporate decision making. Review of the National and Montana Environmental Policy Act; administrative rule making and appeals, strategic planning, lobbying and corporate governance. Students complete a project with an outside group.

G 537 Building Effective Environmental Organizations 3 cr. Offered spring. Prereq., graduate standing. Focus on the tasks and skills necessary to building and managing effective environmental organizations, particularly non-profit. Budgeting, fund-raising, grant-writing, attracting and utilizing volunteers, working with the media. Strategic approaches and how they are shaped by issue, context, and structure.

G 540 Watershed Conservation Ecology 3 cr. Offered autumn. Prereq., college ecology course or consent of instr. Integrates watershed science, policy, planning, action and organizing. The science component explores watershed connections, evaluating change and assessing watershed condition. The policy component explains the scientific basis of national, state and local laws, programs and agencies that affect watersheds. The planning and action component discusses developing watershed conservation plans and selecting actions likely to address problems without creating other problems. The organizing component covers how to help watershed communities make choices, resolve conflicts, build commitment and find funding. Students work individually or in teams to assist Montana groups in developing watershed CPR plans, initiating monitoring projects, and/or conducting education projects.

G 542 Transboundary Environmental Issues 3 cr. Offered intermittently in autumn. Prereq., graduate standing in environmental studies program. Review of the political systems and administrative systems of each country relevant to natural resource policy decision-making and ecological systems. Review pertinent literature, interact with stakeholders, and produce group reports.

G 548 Supervision and Teaching in Environmental Education 3 cr. Offered intermittently. Prereq., EVST 521 or C&I 521. Design, selection and evaluation of materials for the teaching of environmental education.

G 550 Pollution Ecology 3 cr. Offered spring even-numbered years. Prereq., college ecology course or consent of instr. Same as BIOL 550. Examines sources, fate, and effects of pollutants on organisms and ecosystems; methods of measuring and predicting pollutant fate and effects, assessing and reducing risks, estimating ecosystem assimilation capacity; setting standards and restoring ecosystems damaged by pollution. Briefly examines some relevant laws and policies at the federal, state and local level.

G 551 Environmental Field Study 1-3 cr. (R-3) Offered intermittently. Prereq. or coreq., EVST 540 or 550 or 560. Same as BIOL 551. Designing, executing and interpreting environmental field studies. Oriented to studies of aquatic systems and watersheds. Students will assist with a class project and may also pursue their own projects. Projects focus on the Clark Fork, Bitterroot and Blackfoot River basins.

G 555 Research Methods for Social Change 3 cr. Offered spring. Introduction to qualitative methods of research design, data collection, and analysis. Emphasis on research that facilitates and documents social change processes. Hands-on research experience through fieldwork projects. Includes instruction on writing social science and on research ethics.

G 560 Environmental Impact Analysis 3 cr. Offered spring odd-numbered years. Prereq., graduate standing in EVST or consent of instr. Covers legal and scientific aspects of the Environmental Impact Analysis (EIA) including: What is required by international, national and state law and regulations? How does one organize an effective interdisciplinary team research effort and public participation program? What scientific tools are used in EIA? How could EIA process be improved.

G 561 Land Use Planning Law 3 cr. Offered autumn. Same as GPHY 561 (GEOG 561) and LAW 687. Basic overview of the law of land use planning including background in the traditional governmental regulatory, proprietary, and fiscal land use tools. Examination of modern techniques for land use planning; consideration of constitutional limits of authority of state and local governments. Focus on skills in interpreting, drafting and applying state legislation and local ordinances.

G 562 Land Use Planning Clinic 2 cr. Offered every term. Prereq. or coreq., EVST 561. Same as GPHY 562 (GEOG 562). Students assist local communities in long-range planning efforts and development of growth management plans as required by Montana law; ordinance drafting, development proposals, and land use issues.

G 563 Introduction to Environmental Law 3 cr. Offered autumn. Prereq., graduate standing in EVST. Same as LAW 650. Philosophy and values underlying environmental regulation, basic introduction to administrative law, in-depth study of air and water pollution and the environmental policy acts.

G 564 Environmental Law II 3 cr. Offered autumn. Prereq., graduate standing in EVST. Same as LAW 649. In-depth study of the laws addressing toxic substances and solid and hazardous waste, and the Endangered Species Act. Exploration of interaction between land use regulation and environmental law.

G 565 Public Land and Resources Law 3 cr. Offered spring. Prereq., graduate standing in EVST and consent of instr. Same as LAW 654. Historical development of United States public land law, state-federal relations, and the roles of Congress, the executive and the courts; the law applying to specific public land resources: water, minerals, timber, range, and preservation.

G 566 Advanced Public Land Law 2 cr. Offered spring. Prereq., graduate standing in EVST and consent of instr. Same as LAW 619. Collaborative work on practical problems arising in public land and resources law and individual research and writing projects.

G 567 Water Law 3 cr. Offered spring. Same as LAW 663. Interstate water problems; federal/state powers; federal/Indian water rights/Montana water law.

G 573 Environmental Writing 3 cr. Offered autumn. Prereq., graduate standing. Writing workshop designed to improve skills in writing on environmental topics for general audiences. Approaches include personal narrative, natural history, science interpretation, advocacy/argument, place-based essays. Includes analysis of published work from the perspective of technique and craft.

G 575 Seminar in Rhetoric and Environmental Controversy 3 cr. Offered intermittently. Same as COMM 575. The study of how advocates use symbols to influence meaning and action in environmental controversies. Rhetorical concepts used to examine recurring strategies and tactics in specific controversies.

G 579 Advanced Natural Resources Conflict Resolution 3 cr. (R-4) Offered autumn. Same as FOR 579 and LAW 679. Prereq., EVST 513 or consent of instr. Current

topics in theory and practice. Development and discussion of research topics. Topics vary.

G 590 Supervised Internship PEAS Variable cr. (R-8) Spring and autumn, 2 cr.; Summer intensive, 3 cr. Students learn small scale sustainable vegetable farming in a hands-on work environment at the PEAS farm (15 minute bike ride from campus). Lectures, readings and reflection inform the work. Summer students also visit local farms on a once-a week field trips. PEAS is repeatable, as the curriculum changes across the season, and students can attend any semester, though the 3 credit (grad level) summer intensive course is the heart of the program.

G 593 Professional Paper Variable cr. (R-6) Offered autumn and spring. Prereq., graduate standing in EVST.

G 594 Graduate Seminar 3 cr. (R-15) Offered autumn and spring. Prereq., graduate standing in EVST or consent of instr. In-depth analysis of a current environmental topic. Different topics offered each semester.

G 595 Special Topics Variable cr. (R-9) Offered autumn and spring. Prereq., graduate standing in EVST or consent of instr. Experimental offerings of visiting professors, experimental offerings of new courses, or one-time offerings of current topics.

G 596 Independent Study Variable cr. (R-12) Offered autumn and spring. Prereq., graduate standing in EVST. Work on selected problems by individual students under direct faculty supervision.

G 597 Research Variable cr. (R-12) Offered autumn and spring. Prereq., graduate standing in EVST. Directed individual graduate research and study appropriate to background and objectives of the student.

G 598 Internship Variable cr. (R-8) Offered autumn and spring. Prereq., graduate standing in EVST. Practical application of classroom learning during placements off campus.

G 599 Thesis Variable cr. (R-6) Offered autumn and spring. Prereq., graduate standing in EVST.

Faculty

Professors

- Leonard Broberg, Ph.D., University of Oregon, 1995 (Director)
- Vicki Watson, Ph.D., University of Wisconsin, 1981

Associate Professors

- Fletcher Brown, Ph.D., Miami University, 1994
- Phil Condon, M.F.A., M.S., The University of Montana, 1989, 2000
- Neva Hassanein, Ph.D., University of Wisconsin, 1997
- Robin Saha, Ph.D., University of Michigan, 2002
- Daniel Spencer, Ph.D., Mater of Divinity, Union Theological Seminary, New York, 1994, 1983

Emeritus Professor

- Thomas M. Roy, M.A., University of Chicago, 1966