ENVS 002 International Environmental Studies  
10290 / 4 Credits / Tatianan Abatemarco / MWF 9:40 – 10:30 am  
This course explores some of the most pressing global environmental issues of our time, including biodiversity and protected areas, agriculture and food systems, fresh water, energy, waste, and climate change. We examine these issues using a variety of different disciplines and approaches, with a particular focus on the economic, political, and social disparities that affect people's access to natural resources. Case studies from around the world help ground environmental issues with real-world examples. Students will be evaluated with a combination of exams, reading quizzes, written assignments, and lab participation. Note: ENVS 001 is not required as a prerequisite for this course. Students must register for the lecture and a lab section; see registrar’s website for details. Enrollment limit: 240.

ENVS 101 Academic Planning Workshop  
15258 / 1 credit / Ibit Wright / TR 1:15 – 2:30  
This one-credit, six-week course is designed to support ENVS majors who are ready to develop an interdisciplinary plan of study that aligns with their emerging academic, personal and professional goals and interests. A range of panels of speakers and activities will instruct, inspire and assist students to take initiative for their education with all of its requirements, choices and opportunities. Students will be asked to complete readings and reflective writings, make choices about future courses and activities, do research and interview a practitioner in a chosen environmental field of work, and engage with peers and peer mentors. Students will leave the course having completed an introductory exploration of a “life and livelihood,” and a comprehensive academic plan through graduation. Prerequisites: ENVS major, sophomore standing, ENVS 001 and 002, or permission. NOTE: The course begins Week 2 of the semester, with one last class meeting late in the semester.

ENVS 150 / PBIO 195 Natural History and Conservation of the Galapagos Islands  
11451/ 3 Credits / Monique McHenry and Pete Shear / Travel course to the Galapagos, March 11-19, 2017  
A hands-on exploration of the unique biodiversity found in the tropical Andes and the Galapagos Islands. Students will contemplate ideas of how this great diversity came to be and learn about current conservation efforts in place that aim to protect this diversity. Students will keep detailed daily field journals to develop skill in natural history field observation. Program Fee: $2,993. Instructor permission required. Enrollment Limit: 15. For more info please email Pete Shear, nshear@uvm.edu, or Monique McHenry, mmchenry@uvm.edu.

ENVS 154 D2: Traditional Ecological Knowledge  
11458 / 3 Credits / Karen Nordstrom / TR 10:05 – 11:20 am  

ENVS / PSS 156 SU: Permaculture  
11071 / Recitation: 13844 (T) or 13845 (R) / 3 Credits / Victor Izzo / Lecture TR 4:25 – 5:40 pm / Recitation T or R 5:45 –7:15 pm (students also take one recitation)  
This course provides students with an introduction to the principles of permaculture. As a multidimensional and transdisciplinary approach to sustainable living, permaculture is a “way of thinking.” We will explore the permaculture approach via a process of knowledge and experience stacking. This is what I call a grassroots educational pursuit. Through a combination of lectures, field trips, in-class activities, written reflections, guest speakers and films, we will explore each of the fundamental principles underlying the permaculture paradigm. This class is designed as a primer for students looking to take a formal Permaculture Design Course (PDC). Skills and techniques for “reading the landscape,” developing site-responsive design, and representing interpretations and plans through visual maps and public presentations will be developed through a collaborative design by students in groups. Prerequisites: 3 credits in basic biology or ecology. Enrollment Limit: 40 per lecture and 20 each recitation section.

ENVS 180 Radical Environmentalism  
15673 / 3 Credits / Brian Tokar / W 4:05 – 7:05 pm  
As environmental problems continue to escalate, several radical currents have come to influence ecological thought and activism, representing a critical alternative to traditional environmentalism. This course will describe the historical emergence of radical environmentalisms, examine various ecologically-based philosophies, and explore case studies of environmental resistance movements in the US and around the world. Readings, class discussions, and guest presenters will offer a wide range of perspectives, offering students opportunities to examine today's pressing environmental issues through

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the lens of emerging movements and philosophical traditions. The class follows a discussion/seminar format, with students as well as the instructor presenting on core topics, and students evaluated on their participation in class and online discussions, as well as through response papers to the readings. Additionally, students take turns presenting current news on environmental issues and movements, followed by a research paper, and also develop and critically evaluate their own hands-on group projects that apply relevant concepts to local and regional environmental issues. Prerequisites: ENVS 001 or 002, or NR 001 or NR002. Minimum sophomore standing or instructor permission. Enrollment limit: 30.

ENVS 188 Sustainability Science
11488 / 3 credits / Eric Garza / TR 10:05 – 11:20 am / ENVS Natural Science Breadth Course.
Few words are so deserving of dissection than ‘sustainability’ and ‘science’. This course will lead participants through the social and political underpinnings of these two words, and their relevance to several controversial issues commonly addressed by those engaged with the science of sustainability. Among the topics considered are the idea of planetary boundaries, resource scarcity and inequity, environmental pollution and environmental justice, global environmental change, and the relationships between sustainability, resilience and adaptation. Prerequisites: ENVS 001 or ENVS 002 or NR 001 or NR 002 or ENSC 001, minimum sophomore standing. Enrollment Limit: 70

ENVS 191 Environmental Practicum/Internship
10301 / 1-9 Credits / Brendan Fisher
Students engage in independent study, research or internships that have been developed with a site supervisor and faculty sponsor. Course coordinator must approve proposals before the activity begins. Be sure to first carefully review the ENVS 191/291 guidelines. Prerequisites: Sophomore standing or above. Instructor permission required, with project plan approved by your Faculty Sponsor.

ENVS 195 Environmental Journalism
12918 / 3 credits / Josh Brown / T 4:35 – 7:35 pm
Covering the “environmental beat” requires that journalists have the ability to report on complex and interwoven subjects, from land use policy to laboratory discoveries; energy technologies to natural history; waste management to wilderness travel. This course will give students an introduction to finding and tackling these challenging stories. The emphasis of the class is on developing an informed and nuanced approach to reporting and writing environmental stories suitable for newspaper, magazine, radio, and multi-media formats. Through this course you’ll learn about current and emerging environmental topics—both locally and nationally—while you gain hands-on experience in the basics of journalism: deciding what to write about, gathering news, conducting research, investigating, and interviewing. No background in journalism is needed, but you should be a conscientious, inquisitive, determined writer with strong basic writing skills. For more info, email joshua.brown@uvm.edu. Prerequisites: junior standing or instructor permission. Enrollment limit: 26.

ENVS 195 Environmental Policy, Media Literacy, and Activism
13429 / 3 credits / Trish O’Kane / TR 4:25 – 5:40 / ENVS Social Science Breath Course
Across the nation and all over the planet, people are defending the lands and waters that they love, their places, their homes. Mountaintops in Kentucky threatened by coal mining, the Mekong River threatened by damming in Southeast Asia, local watersheds threatened by fracking in Pennsylvania, a wetland park threatened by a gas pipeline in Vermont, an entire island threatened by construction of a US military base in South Korea, much of Louisiana threatened by oceans rising due to global warming, Mayan villagers threatened by Canadian gold mining in Guatemala. As the list grows so does the number of people researching, protesting, petitioning, marching, litigating, and desperately trying to find new ways to protect their places and ways of life. Policy-making and citizen action begin with observation and careful research. In this course, you will become a more effective and active citizen by becoming a more skilled researcher. Through case studies in Vermont, Alabama, South Korea, and Latin America, you will learn what environmental policy is, how it is created, and how an ordinary citizen can influence that process through observation, data collection and recording, fact-finding, media analysis, publishing, and public participation. This course will help you grow in four ways: 1) by developing a critical daily media reading practice based on your interests and passions to achieve media literacy; 2) by connecting you with environmental issues and conflicts in Burlington and in Vermont and drawing the connections between local and global environmental issues; 3) by showing you the many ways that ordinary citizens, both in the US and abroad, influence policy through data collection, research, writing, public speaking, and media campaigns; and 4) by teaching you essential citizenship skills, particularly media analysis, writing and public speaking. Prerequisites: ENVS 001 or ENVS 002 or NR 001 or NR 002 or ENSC 001. Sophomore standing only. Enrollment limit: 60.

ENVS 195 SU: Environmental Entrepreneurship
12935 / 3 Credits / Todd Comen / W 12:00 – 3:00 pm
Entrepreneurial activity is a major source of innovation and job creation around the world. An environmental entrepreneur is someone who is driven not only by the possibility of making a profit, but is also driven by environmental and social
concerns. Environmental entrepreneurs want to make the world a better place by engaging in practices that minimize the environmental impact of their activities or, ideally, practices that don’t result in degradation of the natural environment. Environmental Entrepreneurship is designed to meet individual student interests as well as to introduce broad management concepts that will help every student make informed entrepreneurial decisions. The course is organized around topics derived from student interests, including but not limited to tourism, the built environment, and food and agriculture. Students will learn how organizations strive to minimize their impact on the environment and make meaningful contributions to society. Students will study environmental entrepreneurship at a variety of organizational scales, conducting independent research and learning from case studies. The building blocks of environmental entrepreneurship will be introduced so that students without a business background will understand the key components of creating and operating a successful organization, with emphasis on the business planning process. Prerequisites: ENVS 001, 002 or NR 001, 002, or ENSC 001. Enrollment limit: 30.

ENVS 195 Environmental Literature, Arts, and Media
14250 / 3 credits / Adrian Ivakhiv / TR 2:50 – 4:05 pm / ENVS Humanities Breadth Course
An introduction to the environmental humanities exploring the range of values and cultural expressions of the human-nature relationship. We will explore contemporary and historical works of literary, visual, musical, performative, and media arts to see the role the expressive humanities have played in shaping social-cultural attitudes toward nature and the human dilemma of depending on nature as source and sustenance. Through readings, discussion, class presentations, and written and creative work, students will gain exposure to artists and movements in the environmental arts and literature as well as ecocinema studies. Enrollment limit: 45.

ENVS 195 Emerging Science, Technology, and Health
15485 / 3 credits / Bindu Panikkar / MW 3:30 – 4:45 pm
Science and technology plays a crucial role in our collective attempt to envision and achieve progress. Transformative scientific changes can overturn old paradigms, theories, instruments, and objectives and shape new ways of knowing and doing. Developments in nanotechnology, biotechnology, and genetic engineering have given us new tools to tinker with life itself. They shape how we think about future and how we predict and prepare for our possible futures. In this course, we will examine how science and technology shape human, ecological and societal futures. Viewing power as immanent, we will explore the natures and practices of science and technology, the politics of research communities and the knowledge production process, constructions of scientific and political authority, the interplay between technology, ethics, and human rights, and the importance of democratic dialogue in debating not only the perils but also the promises of technology. Topics of study will include nanotechnology, gene editing, artificial intelligence, global health security as well as future prospects of indigenous knowledges. This course is rooted in the field of Science and Technology Studies, and we will explore in depth the theoretical ideas of sociotechnical imaginaries, knowledge control regimes, and civic epistemologies as well as associated notions of objectivity, rationality, credibility, legality, accountability, and reliability. Prerequisites: ENVS 001 or ENVS 002 or NR 001 or NR 002 or ENSC 001. Sophomore standing only. Enrollment limit: 40.

ENVS 195 History of Environmentalism
15606 / 3 credits / Frank Zelko / TR 2:50 – 4:05 pm
This course will examine how environmentalism has become a major political, social, and cultural phenomenon in the twenty-first century. We will look at the history of the different strands of modern environmentalism and the distinctive approaches taken by various individuals, movements, and organizations. We will examine how successful each has been and explore how environmentalism will need to develop to tackle future challenges.

ENVS 195 Ecuador: Politics of Land Use
15345 / 3 credits / Pete Shear / Winter Session Travel Study Course, 12/26/17 – 1/14/18
Ecuador, land of volcanoes and cloud forest, and a center of the Latin American independence movement, is a fascinating country steeped in incredible ecological and cultural diversity. This course will provide students with the opportunity to learn from the amazing social and ecological dynamism of Ecuador through volunteer work, community home-stays, and talks with political activists, students, campesino and indigenous organizations, and the rural agrarian people that are the backbone of Ecuadorian and global society. We will examine the modern indigenous resistance movement, the geopolitics of non-renewable resource extraction, agro-ecological models for sustainable economic development, sustainable agriculture, hydrology cycles, and the privatization of water. We will also reforest with native tree species to offset our course’s carbon footprint and enjoy stunningly beautiful walks in, this, the most biodiverse nation in the world.

ENVS 197 Microbes Everywhere
12941 / 1 credit / Students Teaching Students (STS) / W 12:00 – 12:50 pm
ENVS 201 Research Methods
10323 / 3 Credits / Brendan Fisher / TR 1:15 – 2:30 pm
This course covers the planning, design, and methods for the ENVS 202 senior capstone thesis or project. It is taught in seminar style and includes instruction and guidance for preparing the literature review and final proposal. Prerequisite: ENVS 151 or APW, minimum junior standing, ENVS major or RSENNR Honors students. Enrollment Limit: 18.

ENVS 202 A, B, or C Senior Project and Thesis
10329 / 1-9 Credits / Brendan Fisher / T 2:50 – 3:40 pm
Weekly voluntary check-in help/support sessions for students working on their ENVS 202 Senior Project or Thesis. Prerequisite: ENVS major; minimum junior standing, ENVS 201 or concurrent registration.

ENVS 202 D Senior Capstone Internship
11252 / 1-9 Credits / Rick Paradis / W 3:30 – 4:20 pm
Weekly voluntary check-in help/support sessions for students working on their ENVS 202D Capstone Internship. This course is meant for students in any part of the capstone internship process from securing internships, to completing working hours, to writing a final paper. Prerequisite: ENVS major; minimum junior standing, ENVS 151 or APW. Enrollment Limit: 40.

ENVS 202 E Food, Land, Community Senior Capstone (Thesis or Internship)
13022 / 1-9 Credits / Ernesto Mendez / W 3:30 – 4:20 pm
Weekly voluntary check-in help/support sessions for students working on their ENVS 202E Capstone Internship. For students with Food, Land, Community concentration working on a senior thesis or capstone internship with Ernesto Mendez. Prerequisite: ENVS major; minimum junior standing, ENVS 151 or APW. Enrollment Limit: 15.

ENVS 204 Climate, Forest, Community
12914 / 3 Credits / Cecilia Danks / TR 2:50 – 4:05 pm
This seminar will take an interdisciplinary, international look at: 1) the complex role of forests as both sinks and sources of carbon, and 2) the climate-related livelihood and equity issues involving local communities that depend on forests, 3) and policies and projects to mitigate and adapt to climate change. We will start by reviewing the natural science literature of the varied roles of forests in climate change and the predicted impacts on forests and related human communities from climate change models. The course then delves into current, socio-ecological issues such as widespread wildfire in Indonesia, the Amazon and the American West in recent years, the controversy over carbon offsetting and REDD, and the pros and cons of wood-based energy. The course will also examine the outcomes of the 2015 UN Climate Change Conference in Paris to unpack the implications for forests and local communities. For the final project, students may pursue independent research on an approved topic. While all majors are welcome to take this course, it is especially good for ENSC (esp. the climate change track) FOR, and NR, and, of course, ENVS majors concentrating in Ecology and Conservation, Sustainability Studies, Environmental Policy and Development, and Nature, Culture, Justice. It can be used as an ENVS senior capstone course. Email me if you have any questions or need an override, contact me at cdanks@uvm.edu. Prerequisites: ENVS 001 and ENVS 002; Junior, Senior, or Graduate standing. Cross-listed with ENSC 295 and NR 285. Enrollment limit: 25.

ENVS 284 Teaching Assistantship
10338 / 1-3 Credits / Tatiana Abatemarco / TBA
Assist instructor in teaching and administration of ENVS 002 International Environmental Studies. Primary responsibilities will include leading at least one weekly discussion session of 15 students each; planning and preparation of instructional materials for discussion sessions; maintenance of student records; and assisting with student grading of course examinations. Teaching assistants are expected to attend all ENVS 002 lectures; lead one or two weekly discussion sessions (3 hrs. ea.); and attend a weekly morning team meeting. Prerequisite: ENVS 002 TA’s only, permission.

ENVS 291 Advanced Environmental Practicum/Internship
10321 / 1-9 Credits / Brendan Fisher
Students engage in advanced level independent study or internships developed with a site supervisor and faculty sponsor. Course coordinator must approve proposals before the activity begins. Prerequisite: ENVS 151 or APW, instructor permission required (via application), senior standing only.

ENVS 295A Women, Health and the Environment
12915 / 3 Credits / Bindu Pannikar / M 4:05 – 7:05 pm
This course uses interdisciplinary approaches to study/analyze the connections between women’s health and environment and their role in shaping the environmental health sciences and social movements. Students will examine critical
scholarship that includes feminist critiques of scientific epistemologies and practices as well as ecofeminist analysis of women’s health and environmental issues. Through the works of women scholars and activists we will examine the chemicals and hormone disrupters in our food, cosmetics, and our environment; the various ways they impact women’s health and the future generations; and the environmental health activism, and policy battles that they have lead for the benefit of humanity and the environment. This seminar will explore real-world problems, local and global. The class will be broken into groups that consist of natural and social science concentrators in order to problem solve from both perspectives. All assignments will be integrated group work. Prerequisites: ENVS 001 and ENVS 002, junior or senior standing. Enrollment limit: 25.

ENVS 295B SU: Birding for Change: Sustainability Education
12937/ 4 Credits / Dr. Trish O’Kane / Service Learning Lab W 1:30 – 5:30 and Lecture M 2:00 - 5:00 pm
Be the change you want to see in the world! This is an environmental justice course that gets schoolchildren outside. It will require humility, patience, persistence, flexibility, long underwear (over half of the course is taught outside), and a sense of humor. This course and service learning program pairs UVM students as enviro-mentors and “bird buddies” with children at Flynn Elementary School. By participating in an after-school birding and nature study club for fourth and fifth graders, UVM students will lay the foundation for a university pipeline program; many of Flynn’s students will become first-generation college students. Our class will cooperate with staff at Flynn Elementary School on Burlington’s New North End to provide this programming. Flynn Elementary has the largest after-school program in the Burlington school district with students from 33 different countries. Surrounded by woods and beautiful parks and gardens, this elementary school is just a five-minute walk from Lake Champlain. Based on the theoretical framework of environmental justice—that the environment is where we live, work and play—our class will help Flynn students to connect to their immediate environment. No prior birding experience is necessary (experience working with children would be extremely helpful). Bird identification is a satisfying skill to acquire and birds are a beautiful portal to a better understanding and appreciation of the biophysical world. Students will learn how to identify Vermont’s most common birds by sight and sound, then they will teach that skill to their Flynn “bird buddies” or "co-explorers.” We will spend every Wednesday afternoon together exploring the neighborhood surrounding Flynn to learn what the parks, woods, lake, and all the wild creatures have to teach us, and what we all have to teach each other. Join our flock. Prerequisites: Junior or senior standing, instructor permission required. Enrollment limit: 23. To register please contact Trish O’Kane, pokane@uvm.edu

ENVS 295 Energy Law and Climate Change
13441 / 3 credits / Jody Prescott / R 6:00 – 9:00 pm
Reducing carbon emissions from energy generation is essential to slowing the increase in CO₂ in our atmosphere and hydrosphere, thereby mitigating the pace of anthropogenic climate change. Increased use of renewable energy sources is promoted as an obvious and significant part of any solution to decreasing CO₂ emissions – many see renewable energy sources as win-win for consumers and the environment. Nothing is without cost, however, and the increased use of renewable energy sources often causes very significant controversies and social conflicts. Energy law and regulations are enormously important parts of this context, and the impacts of their complexity often trouble communities, consumers, energy developers and producers, and environmental activists. In addition to classroom work reviewing important energy laws, regulations and cases with a focus on renewable energy, this course will partner with Vermont Law School’s Institute for Energy and the Environment (IEE) to provide each student a service/experiential learning opportunity in the areas of community engagement or research involving renewable energy. Prerequisites: ENVS 001 and ENVS 002, or POLS 021, junior or senior standing. Enrollment limit: 25.

ENVS 295 Applied Natural Areas
15260 / 3 credits / Richard Paradis / W 12:00 – 3:00 pm

ENVS 295 Therapeutic Herbalism
15265 / 3 Credits / Kate Elmer/W 12:00 – 3:00 pm
This course builds on ENVS 195 (Plant-Based Healing Medicine) in the study of holistic, preventative health, natural medicine, and using plants for medicine. Course primary objectives are to familiarize the students with the holistic (natural medicine) approach to health and healing; the relative safety-toxicity spectrum of botanicals; and the role of nutrition, botanicals, and lifestyle support in preventive health. Students will also be introduced to aspects of clinical practice in botanical medicine. Other objectives: factors that affect dosage determination, current issues in herbalism, an understanding of herb-drug interactions, the making of a standardized tincture, and exploring herbal monographs are covered. Finally, this course aims to familiarize the students with specific pathologies and conditions, the phytotherapeutic approaches to treating them, including supportive lifestyle changes. Recommended: ENVS 195: Plant-based Healing Medicine, and an anatomy and physiology class. Enrollment Limit: 30.
Vermont has long been seen as an innovator in energy and climate policy, with pioneering efforts to increase energy efficiency and encourage the development of renewable energy resources. Many challenges remain, however, including high home heating costs and automobile usage in rural areas, polarized debates over renewables siting, and continued heavy reliance on fossil fuels. This course will immerse students in current energy and climate issues in Vermont and beyond. Groups of students will participate in and critically evaluate service learning projects for one of three leading statewide organizations: 350Vermont; the Vermont Public Interest Research Group; and a partnership of the Vermont Natural Resources Council and Vermont Conservation Voters. Students will also analyze and present current peer-reviewed literature in these fields, while developing professional-level organizing, advocacy and communication skills in their project groups.

In the spirit of the popular geopolitical admonition “Africa is not a country,” many university courses focus on historical and contemporary issues in “sub-Saharan Africa,” in part as a way to question broader stereotypes about “Africa.” This course treats sub-Saharan Africa as a contested world region by introducing students to key debates in critical regional geography (CRG) through the lens of southern Africa. Rather than determining an “essence” of southern Africa as a region, we will analyze a combination of in-depth physical and human geography themes to explore the multiple geopolitical and environmental narratives and imaginaries that influence the ways that diverse actors come to know, define and make regions. This is also an advanced political ecology course in which we examine the politics that shape our understandings of and interactions with various forms and ideas of nature in geographically diverse contexts. ‘Nature’ is a historically and culturally contingent concept, deployed unevenly for the benefit of some and to the detriment of others. Through writing-intensive, research-based and creative mapping assignments, this course offers a unique approach to southern African political ecologies and critical regional geography through six key lenses, including: 1) Excavating origin stories; 2) Being nuclear and locating nuclearity; 3) Transforming frontiers through conservation; 4) Performing embodied politics of race, place and resistance; 5) Engaging trans-boundary river basins and modeling a changing climate; 6) Crossing boundaries of sexuality, gender and landscape via the ‘invisible realm’.

Cross-listed with GEOG 273, CRN 15096