Fall 2018 Environmental Studies Program
Course Listing and Updates

UNIQUE COURSES WITH FIELD EXPERIENCES FOR FIRST YEAR STUDENTS

Biol 1101: First-Year Opportunity: Research and Conservation in Zoos and Botanical Gardens (Every Fall, Losso) NEW IN FA18 An introduction to the world of zoos and botanical gardens. Students will learn of the diverse and cutting-edge ways in which scientists and conservationists study the world's biological diversity and work to conserve it. Students will take weekly field trips to local institutions to meet researchers and conservationists.

Biol 2431/2: Missouri’s Natural Heritage (Every Fall/Spring, Braude) Missouri’s Natural Heritage is for freshmen who want to get outdoors and learn about their home for the next four years. The first semester of the sequence will focus on Missouri geology, climate, archaeology, and native megafauna. This will provide a foundation on which to examine the ecology, restoration, and management of our diverse habitats (prairie, forest, glade, and stream) and the biology of our diverse plant and animal wildlife (arthropods, mollusks, fish, salamanders, lizards, birds, and mammals).

Enst 122: A Sense of Place: Discovering the Environment of St. Louis (Every Fall, Martin) Through exploration in and around St Louis rivers, prairies, and urban landscapes, students learn about their "home" for the next four years. Through field trips, readings, interviews and discussion, students are first-hand what challenges face the environment and the people who live here, and why it is important to understand the community at a local level.

Enst 215: Introduction to Environmental Humanities (Every Fall, Loui) NEW IN FA18 In this seminar we will consider texts illustrating how American citizens evolved in their perception, use, and expectations of the natural world during the nineteenth and early twentieth centuries, especially but not limited to the practice of agriculture. Topics will include: agrarian democracy, settlement of the Great Plains by immigrant farmers, the Dust Bowl, fragmentation of the Sioux ecosystem. This cultural research will frame our visits to the Tyson Research Center. First and second year students only.

INTRODUCTORY LEVEL COURSES FOR NON-MAJORS

150 Inter D 101: Earth's Future: Causes and Consequences of Global Climate Change (Every Fall, Williams and Kidder) This course examines the physical basis for climate change, how climates are changing and how we know and assess that climates are changing, and the effects of climate change on natural and human systems. This is a broad, introductory course for first year students and presumes no special subject knowledge.

Enst 105: Sustainability in Business (Every Spring, Webb) In this course, we explore key concepts, debates, and issues driving sustainability in business. We will also look at various sustainability tools, principles, and frameworks that businesses can use to better understand the natural systems from which sustainability is derived and upon which all organisms and organizations rely to sustain their own existence.

Enst 110: Environmental Issues (Every Fall, Parks) This course examines the science behind current environmental issues, with emphasis on Earth Science. Students will gain an understanding of the consequences of the way that humans currently interact with the natural environment and potential solutions that would allow long-term sustainability of the Earth.

Enst 115: Introduction to Conservation Biology (Every Spring, Parks) The purpose of this class is to help create citizen stewards for our natural environment. By helping students to better understand our natural biological world and the importance of the issues facing it, students are empowered to become active participants in environmental protection and awareness as citizens, voters, volunteers, and even in potential professional applications.

INTRODUCTORY COURSES FOR MAJORS AND MINORS

BIO 2950: Introduction to Environmental Biology (Every Fall, Pardini) This active-learning course teaches principles of environmental biology and general science literacy skills. Four main topics (human population growth, ecosystem carbon and energy, biodiversity, sustainable agriculture) are covered through exploration around the central question, "How can we feed a growing human population and conserve biodiversity without destroying the planet?"

Enst 250: One Health Linking the Health of Humans, Animals, and the Environment (Every Fall, Deem and Adalsteinsson) NEW FA18 This course is an introduction to One Health, a collaborative effort of scholars and practitioners in human medicine, veterinary medicine, epidemiology, ecology, and sociology, among others, working to attain optimal health for people, animals, and the environment. Students will learn about challenges threatening environmental, animal, and human health and the holistic, transdisciplinary approach necessary to develop solutions. First and second year students only.

Enst 290: Sophomore Seminar in Sustainability and the Environment (Every Fall, Parks) This course will provide an opportunity for students to evaluate and explore potential paths in environmental studies, and learn presentation skills to carry forward in their careers.

Epsc 201: Earth and the Environment (Every Semester, Various) Introduction to the study of the Earth as a dynamic, evolving planet. Emphasis on how internal and surface processes combine to shape the environment. Themes: Earth's interior as revealed by seismic waves; Earth history and global tectonics shown by changes to ocean floors, mountain-building, formation of continents, earthquakes, and volcanism; climate history and global biogeochemical cycles, influenced by circulation of atmosphere and oceans, ice ages, and human activity. Composition and structure of rocks and minerals.

Epsc 219: Energy and the Environment (Spring, Wysession) This active-learning course examines energy from many human-relevant perspectives, including scientific, social, economic, and political viewpoints. Humans use an enormous amount of energy, at the rate of 18 terawatts. Where does this energy come from? How long will it last? What are the consequences? We examine how energy relates to scientific concepts of heat, work, and power, and cover the types, abundance, advantages, challenges of renewable energy sources. Now counts for Environmental Biology Major!

Hist 2410: Sophomore Seminar: Slow Violence: An Introduction to Political Ecology (Spring, Bivar) NEW SP19 This sophomore seminar is as an introduction to the related fields of political ecology and environmental history. Students will learn how to use the tools of political economy and historical inquiry to understand how environmental change and conflict are informed by political, economic, and social dimensions.

Polsci 2410: Introduction to Environmental Policy (Every Semester, Krummenacher) This course provides an introduction to and overview of environmental policy. Subjects covered include the policy process, the behavior of interest groups and political parties, and the actions of policymakers like Congress and the President. We’ll also examine issues such as pollution control, climate change, and biodiversity.

ADVANCED ELECTIVES INCLUDING CRITICAL THINKING, ANALYSIS, PROBLEM SOLVING, AND COMMUNICATION

Enst 315: Fallout: Analyzing Texts and Narratives of the Nuclear Era (Every Spring, Loui) In this environmental humanities course students compare and integrate diverse texts and narratives through which Americans have developed a complex relationship to nuclear technology. Using texts such as literary non-fiction, history, environmental anthropology, natural history and public health, students explore aspects of the Manhattan Project, the Chernobyl Nuclear Reactor accident, and debates regarding the current and future use of nuclear energy. This course emphasizes critical thinking and writing.

Enst 316: Beyond the Evidence (Spring 2019, Pardini) NEW SP19 This class explores how people’s beliefs, identity, and emotions play a role in shaping how we receive and process scientific information in largely unconscious ways. Through reading, weekly reflective writing, and discussion we explore the role of world view, political ideology, culture, cognition, and unconscious cognitive processes shape our beliefs and behaviors with special attention to the case studies of climate change and vaccination. The class is designed for upper level environmental and pre-health students.

Enst 340: Energy Governance in Israel and the Middle East (Coming Spring 2019, Retting) NEW SP19 Students gain a deep understanding of the complexities involved in energy policy formulation and its profound impact on the security, economy and foreign policy of the Middle East. The course examines such issues as securing energy markets and...
ENST 350W: Environmental Writing (Every Spring, Martin) This course aims to provide students with the writing skills they need to be successful in the environmental field upon graduation. Students will examine environmental issues through review of data and facts underlying positions and decisions. They will explore the role of audience, purpose and author angle of vision as they examine the role of multiple stakeholders in environmental issues and processes.

ENST 357: Environmental Problem Solving (Every Spring, Martin) This course aims to provide students with the opportunity to develop and apply problem-solving skills in the context of environmental challenges. Students will learn basic frameworks of decision-making through readings and role-play. Through the role-play students will grapple with the perspectives of multiple stakeholders, the interplay of science and policy, and the ambiguity and uncertainty inherent in decision-making processes.

ENST 364: Field Methods for Environmental Science (Every Fall, Ladd) FIELD-BASED This course provides training and experience in analytical and field methods useful in environmental science, natural science, applied conservation, and environmental work. Topics include site and habitat assessment, ecological monitoring, sampling designs, methods for sampling abiotic and biotic components, including plants, animals, soil sampling, and hydrogeology. Now counts for Environmental Biology Major!

ENST 365: Applied Conservation Biology (Every Spring, Ladd) FIELD-BASED A hands-on introduction to the concepts of conservation biology and applied conservation practice, including designing and implementing conservation projects. Readings, lectures, classroom exercises, and field projects will immerse students in the tools and techniques needed for successful and sustainable conservation outcomes in contemporary landscapes. Now counts for Environmental Biology Major!

ENST 375: Urban Ecology (Every Spring, Parks) Urban Ecology is a field of study within ecology that focuses on the urban environment as an ecosystem and attempts to understand how humans and nature can better coexist in these highly modified environments. The ultimate goal is to aid efforts for more sustainable cities through better urban planning and practices. It is a multidisciplinary study including topics from ecology, evolution, and conservation biology, as well as architecture, economics, and business.

ENST 380/580: Applications in GIS (Every Semester, DeMatteo) This introductory course in Geographic Information Systems (GIS) is designed to provide basic knowledge of GIS theory and applications using the existing state-of-the-art GIS software. The first weeks of the course will provide a broad view of how you can display and query spatial data and produce map products. The remainder of the course will focus on applying spatial analytical tools to address questions and solve problems. Students complete a final independent project that integrates material learned during the course.

ENST 402: Topics in Environmental Science: International Energy Politics (Every Fall, Rotting) NEW FA18 This course analyzes long-term political, economic and security trends in the international energy markets (oil, natural gas, coal, nuclear, wind and solar). It examines the effects of energy resources on peace and conflict, on the stability and well-being of democracies and dictatorships, and on the domestic and foreign politics of the United States, the European Union, Russia, Saudi Arabia, Iran, Iraq, Nigeria and Venezuela.

ENST 461: Introduction to Environmental Law and Policy (Every Fall, Hubertz) Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statements, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared with health risks in setting environmental standards. Discusses the need for environmental regulation to protect societal resources.

ENST 481/581: Advanced GIS (Every Semester) This course is designed to move beyond tools and skills learned in Applications in GIS and is valuable in all disciplines. Classes will feature hands-on exercises selected to help you master advanced GIS analysis tools and techniques while providing experience in the planning and execution of real-world projects.

ENST/BIO 381: Introduction to Ecology (Every Spring, Pardini/Mangan) This course explores the science of ecology, including factors that control the distribution and population dynamics of organisms and the structure and function of biological communities. It touches on applications of these principles such as conservation, restoration, and disease ecology. Principles of experimental design, quantitative data analysis and interpretation, and mathematical models are critical to the field of ecology and are emphasized throughout the course.

HIST 3068: The Human History of Climate Change (Every 1-2 years, Bivar) Climate change is not a new concern: Advisors to the king of France warned against deforestation in the 18th and 19th centuries and experiments revealed the arrival of acid rain in the industrial centers of Great Britain. This course examines the longer history of climate change and how it has been addressed as a scientific, political and environmental issue. The course will also introduce students to the field of environmental history and explore how the methods of this field of inquiry challenge traditional historical categories.

HIST 3194: Environment and Empire (Coming Spring 2019, Adcock). NEW SP19 How did imperial efforts to maximize productivity and profits impact the ecological balance of forests, pastures, and farmland, rivers and rainfall, animals and humans? We’ll ask, with environmental historians of the U.S., how colonialism marked a watershed of radical ecological change. The course will cover examples from Asia to Africa, with a focus on the “jewel of the crown” of the British empire: the Indian subcontinent. We’ll learn how the colonized contributed to the science of environmentalism, and how they forged a distinctive politics of environmentalism built upon local resistance and global vision, inspired by religious traditions and formative thinkers, not least Mahatma Gandhi.

POLSCI 340: Topics in Politics: Environmental Justice (Every Spring, Kummenacher) COMMUNITY-ENGAGED This course explores the history and foundations of the environmental justice movement along with current issues and methods of analysis. Policy responses to environmental injustices will be discussed and the claims of injustices evaluated. Students will work with a community-based organization in the St. Louis region to explore a local case of environmental justice.

POLSCI 3752: Topics in American Politics: Globalization, Urbanization, & the Environment (Every Fall, Kummenacher) The rapid spread of urbanization has profound consequences for environmental quality. This course explores the causes and consequences of urbanization on environmental health and how local environmental conditions may facilitate the growth of modern mega-cities. Topics in adverse effects of demographic changes on rural communities and as young people seek opportunity in cities and the benefits to environmental quality from an expanding middle class.

INTERDISCIPLINARY, PROJECT-BASED CAPSTONE COURSES

These courses engage students in collaborative work in interdisciplinary teams on projects, usually with a university- or community partner. Students engage in deep, interdisciplinary work and experience the nuance, ambiguity, and challenge of working side-directed work on real environmental issues.

ENST 405: Sustainability Exchange: Community and University Practicum (Every Semester, Lovery and others) COMMUNITY-ENGAGED The Sustainability Exchange brings together students working in trans-disciplinary teams that tackle real-world environmental and sustainability problems through experiential education. Students participate in projects with clients or partners on- or off-campus, developed with and guided by faculty mentors, with the intention of delivering an applicable end-product that solves “wicked” problems requiring innovative methods and solutions.

ENST 452: International Climate Negotiation Seminar (Every Fall, Martin) This course is a three-credit advanced seminar for students who will represent Washington University at the annual United Nations Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). Students learn the basics of the UNFCCC process, how to identify, analyze and evaluate policy positions in context of science. Students begin to see the interaction between climate policy, science, technology, and political contexts, and their role in shaping change.

ENST 539: Interdisciplinary Environmental Clinic (Every Semester, Miller, Goode, Hubertz and others) COMMUNITY-ENGAGED This course constitutes the technical component of an interdisciplinary environmental clinic based at the Law School. Engineering and Arts & Sciences students participate in interdisciplinary teams with law students, handling environmental projects for public interest, environmental or community organizations or individuals.
Fall 2018 Environmental Studies Program Updates

Minor in Environmental Analysis

- **Deep training:** Courses in analysis, critical thinking, and problem solving
- **Accessible:** Most courses do not have pre-requisites*
- **Application and problem solving:** Many opportunities for interdisciplinary, collaborative, project-based, and community-engaged learning
- **Pairs well with disciplinary-based majors to provide interdisciplinary, applied experiences that can be leveraged for career and job preparation**

This minor was developed to prepare students to tackle real-world environmental challenges by providing more robust opportunities for interdisciplinary knowledge and skill development. The minor is structured to provide students with opportunities to strengthen their critical analysis and problem-solving skills through participation in team-based, experiential, often community-engaged learning around “wicked” real-world problems. Most courses do not have pre-requisites.*

**Required Courses**

- ENST 350W: Environmental Writing (Every Spring)
- ENST 357: Environmental Problem Solving (Every Spring)
- ENST 380: Introduction to GIS (Every Semester)

One Interdisciplinary Project-Based Capstone Course

- ENST 405: Sustainability Exchange (Every Semester)
- ENST 406: Urban Ecosystem Principles Integration (Every Fall)
- ENST 452: International Climate Negotiation Seminar (Every Fall)
- ENST 539: Interdisciplinary Environmental Clinic (Every Semester)

One Advanced Elective in Natural Science

- ENST 364: Field Methods for Environmental Science (Every Fall)
- ENST 365: Applied Conservation Biology (Every Spring)
- ENST 481: Advanced GIS (Every Semester)*
- EpSc 454: Exploration and Environmental Geophysics (Every Fall)*

One Advanced Elective in Social Science and Humanities

- ECON 411: Environmental Policy (Every Fall)*
- ECON 461: Intro to Environmental Law and Policy (Every Fall)
- ENST 310: Ecological Economics (Every Spring)
- ENST 315: Flightout: Analyzing Texts & Narratives of the Nuclear Era (Every Spring)
- ENST 316: Beyond the Evidence (Every Spring)
- ENST 335: Environmental Ethics (Every Semester)
- HIST 3066: Human History of Climate Change (Every 1-2 years, SP18)
- POLSCI 4043: Public Policy Analysis (Every Year)

*Pre-req: ENST 481 (ENST 380); EpSc 454 (EpSc 201); ECON451 (ECON 1011)

Minor in Environmental Studies

- **Exposure:** Includes introductory-level courses
- **Accessible:** Because it includes introductory courses
- **Flexible:** Wide degree of choice in elective categories
- **Pairs easily with many majors to provide interdisciplinary exposure**
- **Recall,** if a student has a major and a minor, the upper-level (300+) units for the major and minor must be independent of one another

**Required Core Courses**

- BIOL 372: Behavioral Ecology
- BIOL 381: Intro to Ecology
- ENST 364: Field Methods for Environmental Science
- ENST 365: Applied Conservation Biology
- ENST 375: Urban Ecology
- EpSc 323: Biogeochemistry
- EpSc 401: Earth Systems Science
- EpSc 413: Introduction to Soil Science

One advanced science course

- ENST 461: Introduction to Environmental Law and Policy
- POLSCI 3240: Political Economy of Public Goods
- POLSCI 331: Topics: Theories of justice
- POLSCI 332: Environmental and Energy Issues
- POLSCI 3752: Topics: Globalization, Urbanization, and the Environment
- POLSCI 4043: Policy Evaluation

One advanced anthropology or ethics course

- ANTH 3053: Nomadic Strategies and Extreme Ecologies
- ANTH 3322: Brave New Crops
- ANTH 3472: Global Energy and the American Dream
- ANTH 361: Culture and Environment
- ANTH 4211: People and Plants: Paleothnobotany and Ethnothnobotany
- PHIL 335F: Introduction to Environmental Ethics

Other advanced courses pre-approved for substitution

- ENST 465: Sustainability Exchange
- ENST 452: International Climate Negotiation Seminar
- See website for other courses that are pre-approved substitutions

Environmental Biology Major Changes approved Fall 18

**Core Requirements**

- Choose EpSc 201 (Earth and the Environment) or EpSc 219 (Energy and the Environment)
- BIOL 2950 Introduction to Environmental Biology
- BIOL 2960 Introduction to Biology
- BIOL 2970 Introduction to Biology
- CHEM 111A/151 General Chemistry
- CHEM 112A/152 General Chemistry
- MATH 131 Calculus 1
- MATH 132 Calculus 2
- PHYS 117A/197 Physics 1
- BIOL 381 Introto Ecology

**One of the following Chemistry courses**

- CHEM 261 Organic Chemistry 1
- EpSc 323 Biogeochemistry
- EECE 210 Introduction to Environmental Engineering
- EECE 505 Aquatic Chemistry
- EECE 531 Environmental Organic Chemistry

**One of the following courses in Statistics, GIS**

- ENST 380 Applications in GIS
- MATH 2200 Elementary Probability and Statistics
- MATH 3200 Elementary to Intermediate Statistics and Data Analysis

**One Upper-Level Biology Lab Course (see listing on page 2)**

- Any lab course is acceptable

**One of the following Area A or B Biol 300+ courses**

- BIOL 3041 Plant Biology and Genetic Engineering
- BIOL 3151 Endocrinology
- BIOL 328 Principles in Human Physiology
- BIOL 334 Cell Biology
- BIOL 3411 Principles of the Nervous System
- BIOL 3421 Introduction to Neuroethology
- BIOL 3422 Genes, Brains and Behavior
- BIOL 349 Microbiology
- BIOL 4023 How Plants Work: Physiology, Growth and Metabolism
- BIOL 4030 Biological Clocks
- BIOL 451/4810 General Biochemistry
- BIOL 4580 Principles of Human Anatomy and Development

**One additional Biol 300+ major-track course**

- May include Biol 500

**One upper-level elective**

- ENST 364 Field Methods for Environmental Science
- ENST 365 Applied Conservation Biology
- EpSc 323 Biogeochemistry
- EpSc 352 Earth Materials
- EpSc 353 Earth Forces
- EpSc 385 Earth History
- EpSc 409 Surface Processes
- EpSc 413 Introduction to Soil Science
- EpSc 428 Hydrology
- EpSc 429 Environmental Hydrogeology
- EpSc 443 Methods in Biogeochemistry
- EpSc 444 Environmental Geochemistry
- EpSc 486 Paleoclimatology

Visit us at [http://enst.wustl.edu/](http://enst.wustl.edu/). Contact Barb Winston, bowinston@wustl.edu or Eleanor Pardini, epardini@wustl.edu for more information.
Community-based Internship Program

We partner with local environmental and community organizations to offer paid, off-campus internships to our students. These are amazing opportunities for students to root themselves in St. Louis, and to get important field experience. With this program, we meet student demand for community-engaged learning, deepen student understanding of the multi-faceted career paths open to them, and meaningfully support our partners’ capacity to achieve their missions.

We are looking for enthusiastic and hard-working graduate or undergraduate students who want to be part of the movement to advance sustainability at Washington University. Our internships offer students the chance to deepen their learning, prepare for careers and support the work of community-based partners. The internship program operates year round during the fall and spring semesters (part-time), as well as during the summer (full-time). The multi-semester positions require a commitment of 5-10 hours/week during the school year; summer positions are full-time (37.5 hours/week). Undergraduate positions start at $10/hour; graduate positions start at $12/hour. Associates work collaboratively in groups on projects with oversight from the Environmental Studies and Office of Sustainability staff. Current WashU students (undergraduate and graduate) are eligible for Environmental Studies internship positions. Preference is given to students enrolled in Arts & Sciences. For summer internships, current students are defined as students who will be continuing at WashU for fall semester.

Expectations for Interns

We want to make sure our host sites receive interns that serve their organizations well. Accordingly, we have high expectations of our interns that mirror the WashU Career Center recommendations for maximizing internship experiences, available here: https://careercenter.wustl.edu/items/13-ways-to-maximize-your-summer-experience/

- Go in with goals
- Regularly communicate with your manager (and make them look good!)
- Adopt the right attitudes: Confidence & humility, readiness to learn, readiness to change, respect, and work ethic
- Be noticeably awesome
- Get to know everyone and learn from them
- Talk the talk & walk the walk

Recent Internships

- Green Social Enterprise Intern with Dutchtown South Community Corporation on the So Fresh So Clean So Creative Project (SFSCSC), which aims to create a Green Social Enterprise addressing waste management issues and generating green jobs for neighborhood residents.
- River Protection Organizer Intern with Missouri Coalition for the Environment
- Community Garden Intern with Restorative Justice Movement Center
- Events and Engagement Intern with Environmental Studies Program
Environmental Biology Major

New course options approved Fall 18

Core Requirements
- Choose EpSc 201 (Earth and the Environment)
  Or EpSc 219 (Energy and the Environment)
- Biol 2950 Introduction to Environmental Biology
- Biol 2960 Introduction to Biology
- Biol 2970 Introduction to Biology
- Chem 111A/151 General Chemistry
- Chem 112A/152 General Chemistry
- Math 131 Calculus 1
- Math 132 Calculus 2
- Phys 117A /197 Physics 1
- Biol 381 Intro to Ecology

One of the following Chemistry courses
- Chem 261 Organic Chemistry 1
- EpSc 323 Biogeochemistry
- EECE 210 Introduction to Environmental Engineering
- EECE 505 Aquatic Chemistry
- EECE 531 Environmental Organic Chemistry

One of the following courses in Statistics, GIS
- ENST 380 Applications in GIS
- Math 2200 Elementary Probability and Statistics
- Math 3200 Elementary to Intermediate Statistics and Data Analysis

One Upper-Level Biology Lab Course
- Any lab course is acceptable

One of the following Area C Biol 300+
- Biol 3501 Evolution
- Biol 372 or 472 Behavioral Ecology
- Biol 4181 Pop. Genetics and Microevolution
- Biol 4182 Microevolution
- Biol 419 Community Ecology
- Biol 4195 Disease Ecology

One of the following Area A or B Biol 300+ courses
- Biol 3041 Plant Biology and Genetic Engineering
- Biol 3151 Endocrinology
- Biol 328 Principles in Human Physiology
- Biol 334 Cell Biology
- Biol 3411 Principles of the Nervous System
- Biol 3421 Introduction to Neuroethology
- Biol 3422 Genes, Brains and Behavior
- Biol 349 Microbiology
- Biol 4023 How Plants Work: Physiology, Growth and Metabolism
- Biol 4030 Biological Clocks
- Biol 451/4810 General Biochemistry
- Biol 4580 Principles of Human Anatomy and Development

One additional Biol 300+ major-track course
- May include Biol 500

One upper-level elective
- EnSt 364 Field Methods for Environmental Science
- EnSt 365 Applied Conservation Biology
- EpSc 323 Biogeochemistry
- EpSc 352 Earth Materials
- EpSc 353 Earth Forces
- EpSc 385 Earth History
- EpSc 409 Surface Processes
- EpSc 413 Introduction to Soil Science
- EpSc 428 Hydrology
- EpSc 429 Environmental Hydrogeology
- EpSc 443 Methods in Biogeochemistry
- EpSc 444 Environmental Geochemistry
- EpSc 486 Paleoclimatology

Courses to look for Spring 2019

ENST 364: Field Methods for Environmental Science (Every Fall, Ladd) FIELD-BASED This course provides training and experience in analytical and field methods useful in environmental science, natural science, applied conservation, and environmental work. Topics include site and habitat assessment, ecological monitoring, sampling designs, methods for sampling abiotic and biotic components, including plants, animals, soil sampling, and hydrogeology. Includes field work at Forest Park and/or Tyson Research Center. Now counts for Environmental Biology Major!

ENST 365: Applied Conservation Biology (Every Spring, Ladd) FIELD-BASED A hands-on introduction to the concepts of conservation biology and applied conservation practice, including designing and implementing conservation projects. Readings, lectures, classroom exercises, and field projects will immerse students in the tools and techniques needed for successful and sustainable conservation outcomes in contemporary landscapes. Includes field work at Tyson Research Center. Now counts for Environmental Biology Major!

ENST 316: Beyond the Evidence (Spring 2019, Pardini) NEW SP19 This class explores how people’s beliefs, identity, and emotions play a role in shaping how we receive and process scientific information in largely unconscious ways. Through reading, weekly reflective writing, and discussion we explore the role of world view, political ideology, cultural cognition, and unconscious cognitive processes shape our beliefs and behaviors with special attention to the case studies of climate change and vaccination. The class is designed for upper level environmental and pre-health students. This course may count toward an Environmental Studies Minor but not the Environmental Biology Major; we would love to see upper-level students with environmental and public health interests! Email Dr. Pardini if you want to connect with students who participated in a pilot version in Spring 2018.

BIOL 4195: Disease Ecology (Spring 2019, Penczykowski) NEW SP19 Disease ecology is an interdisciplinary field that bridges concepts from fields including population ecology, community ecology, landscape ecology, and evolutionary biology. This course introduces the study of infectious diseases with an emphasis on theoretical, experimental, and quantitative approaches. The course will integrate studies of infectious diseases from across disciplines including human epidemiology, veterinary medicine, wildlife epidemiology, plant pathology, parasitology, and ecology. Principles of Biology II (Bio 2970) required, Introduction to Ecology (Bio 381) recommended, or permission of instructor.

Contact Dr. Scott Mangan, smangan@wustl.edu or Dr. Eleanor Pardini, epardini@wustl.edu for more information