

ENVIRONMENTAL SCIENCE AND POLICY (EVPP)

100 Level Courses

EVPP 108: *Ecosphere - Introduction to Environmental Science I-Lecture.* 3 credits.

This course studies components and interactions that make up natural systems of our home planet. It teaches basic concepts in biological, chemical, physical, and earth sciences in integrated format with lecture, laboratory, and field exercises. Note: EVPP 108 and 109 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Mason Core: Natural Science with Lab, Natural Science Overview (<http://catalog.gmu.edu/mason-core/>)

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 109: *Ecosphere - Introduction to Environmental Science I-Lab.* 1 credit.

This course studies components and interactions that make up natural systems of our home planet. It teaches basic concepts in biological, chemical, physical, and earth sciences in a laboratory format. Note: EVPP 108 and 109 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Mason Core: Natural Science with Lab (<http://catalog.gmu.edu/mason-core/>)

Specialized Designation: Green Leaf Related Course

Registration Restrictions:

Required Prerequisites: (EVPP 108^{*C} or 108^{XS}).

* May be taken concurrently.

^C Requires minimum grade of C.

^{XS} Requires minimum grade of XS.

Schedule Type: Laboratory

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 112: *Ecosphere: Introduction to Environmental Science II-Lecture.* 3 credits.

Studies components and interactions that make up natural systems of our home planet. Teaches basic concepts in biological, chemical, physical, and Earth sciences in lecture format, focusing on major environmental issues from a scientific perspective. Note: EVPP 112 and 113 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Mason Core: Natural Science with Lab, Natural Science Overview (<http://catalog.gmu.edu/mason-core/>)

Specialized Designation: Green Leaf Related Course

Recommended Prerequisite: EVPP 113 (may be taken concurrently)

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 113: *Ecosphere: Introduction to Environmental Science II-Lab.* 1 credit.

Studies components and interactions that make up natural systems of our home planet. Teaches basic concepts in biological, chemical, physical, and Earth sciences in a hands-on laboratory format, focusing on major environmental issues from a scientific perspective. Note: EVPP 112 and 113 can be used to fulfill a 4-credit lab science requirement. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Mason Core: Natural Science with Lab (<http://catalog.gmu.edu/mason-core/>)

Specialized Designation: Green Leaf Related Course

Registration Restrictions:

Required Prerequisites: (EVPP 112^{*C} or 112^{XS}).

* May be taken concurrently.

^C Requires minimum grade of C.

^{XS} Requires minimum grade of XS.

Schedule Type: Laboratory

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

200 Level Courses

EVPP 201: *Environment and You: Issues for the Twenty-First Century.* 3 credits.

Introduces broad aspects of human-environmental interactions in the contemporary world. Topics range broadly from global populations and wastewater treatment to environmental law, and genetic engineering. Includes both science and science policy of the environment. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Mason Core: Natural Science Overview, Encore: Sustainability (<http://catalog.gmu.edu/mason-core/>)

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 210: *Environmental Biology: Molecules and Cells.* 4 credits.

This course provides environmental science majors with the cellular foundation required for subsequent courses in the BS curriculum with a focus on how biological systems respond to environmental threats. The course emphasizes the connection between cellular processes and

a healthy environment, and how this relationship is jeopardized by a variety of chemical and physical environmental perturbations. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Corequisite: CHEM 211.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

300 Level Courses

EVPP 301: *Environmental Science: Biological Diversity and Ecosystems*. 4 credits.

This course provides environmental science majors with the necessary background in biological diversity and ecological science required for subsequent courses in the BS curriculum. The course reviews the diversity of life on earth and the structure and functioning of ecosystems and populations. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:

Required Prerequisites: EVPP 210^C or 210^{XS}.

^C Requires minimum grade of C.

^{XS} Requires minimum grade of XS.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 302: *Environmental Science: Biomes and Human Dimensions*. 4 credits.

This course provides environmental science majors with the necessary background in biomes and human dimensions required for subsequent courses in the BS curriculum. The course reviews the functioning of aquatic and terrestrial biomes and human interactions with and impacts on the environment. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:

Required Prerequisites: EVPP 301^C or 301^{XS}.

^C Requires minimum grade of C.

^{XS} Requires minimum grade of XS.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 305: *Environmental Microbiology Essentials*. 3 credits.

Provides understanding of microbes and their function as a vital part of an environmental education. The role of microbes is central to many environmental issues such as climate change, biodegradation of toxics, wastewater treatment and drinking water contamination. Course provides

an introduction to the breadth of microbiology including essential information for students studying environmental problems and their solution. Notes: Laboratory section (EVPP 306) is a corequisite unless previously completed. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 210 and 30 credit hours, or permission of instructor;

Recommended Corequisite: EVPP 306.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 306: *Environmental Microbiology Essentials Laboratory*. 1 credit.

Laboratory study of environmental microbiology. Course provides an introduction to the microbiological techniques for students studying environmental problems and their solution. Examples include microbiology of natural ecosystems (e.g., Potomac River), bacteria in fresh and estuarine waters and sediments, Indicator organisms (e.g., coliform bacteria), molecular identification of unknown bacteria from nature, and visualization of bacteria in their natural habitat. Notes: Lecture section (EVPP 305) is a corequisite. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 210 and 30 credit hours, or permission of instructor.

Recommended Corequisite: EVPP 305.

Schedule Type: Laboratory

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 309: *Oceanography*. 3 credits.

Explores the geological, chemical, physical, and biological aspects of the global oceans. For science majors and minors only. May include field trips. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 309, GEOL 309.

Recommended Prerequisite: Two of the following lab sciences courses are required for a total of 8 credits: [GEOL 101 + GEOL 103, or 102 + GEOL 104], [EVPP 108 and 109 or 112 and 113 or 210], CHEM 211 and 213, [BIOL 102 or 213], [PHYS 160 and 161 or 243 and 244].

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 318: *Conservation Biology*. 3 credits.

Introduces science used to identify species in need of conservation, and techniques to manage and protect organisms. Notes: Cannot be taken with Smithsonian Seminar (off campus classes). CONS 401, CONS 411. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/>)

colleges-schools/science/environmental-policy/). Limited to three attempts. Equivalent to BIOL 318.

Recommended Prerequisite: BIOL 308 or BIOL 310, or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 322: *Business and Sustainability*. 3 credits.

Examines the types of approaches businesses can take to respond to sustainability concerns, Designed to prepare students for assisting organizations to incorporate sustainability considerations into their strategic decision-making. Notes: Students from multiple disciplines (business, social sciences, natural sciences, humanities, education, etc.) can participate in the class without having had previous courses in management. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to INTS 332.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 30 credit hours, recommend EVPP 361/GOVT 361 Introduction to Environmental Policy

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 326: *Animal Physiology*. 3 credits.

This course will examine animal physiology across different levels of biological organization, from molecules to cells to whole organisms, and will highlight the diversity of physiological mechanisms across different groups of animals. Emphasis will be placed on how ecology and evolution shape the physiology of organisms as well as how physiology forms the basis for how animals interact with their environment. This course will cover all the major physiological systems in animals (e.g., circulatory system) as well as how these systems are integrated to perform ecological functions (e.g., flight). Finally, emphasis will be placed on the effects of environmental change on animal function, and how animals may respond physiologically to such changes. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: (BIOL 213 or U213), or EVPP 210, or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 336: *Tackling Wicked Problems in Society & the Environment*. 3 credits.

Many of our most pressing social and environmental issues today fall into the category of “wicked problems”. Characterized by complexity, uncertainty, and divergence of human values and viewpoints, wicked problems are prone to becoming mired in controversy and failures of governance. To understand the nature of these problems, we must

understand the systems from which they arise and their dynamics. This course in human dimensions of the environment takes a problem-based learning approach and introduces foundational literatures on wicked problems, systems thinking, and collective governance. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Specialized Designation: Green Leaf Related Course

Schedule Type: Lecture, Recitation

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 337: *Environmental Policy Making in Developing Countries*. 3 credits. Overview of environmental policy process in developing countries around the world. Major focus on understanding distinctive problems and dynamics of environmental policy making in poor countries to generate better policy decisions and management. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Specialized Designation: Green Leaf Related Course, Writing Intensive in Major

Recommended Prerequisite: 60 credits.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 338: *Economics of Environmental Policy*. 3 credits.

Introduction to environmental, resource, and ecological economics for non-economist undergraduates. Covers basic theories of scarce resource allocation and examines conditions under which market allocations are efficient and sustainable. Includes graphical and verbal presentation of theory. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: ECON 100 or ECON 103 or ECON 105 or ECON 110, or permission from instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 350: *Freshwater Ecosystems*. 4 credits.

Studies physical, chemical, and biological processes in lakes, streams, and wetlands. Lectures, field trips, and lab exercises teach physical and chemical aspects of aquatic systems and life cycles, and adaptations of aquatic organisms. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 350.

Recommended Prerequisite: CHEM 211/ 213 and CHEM 212/214 or CHEM 155/156 and BIOL 308 or EVPP 301.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 355: Ecological Engineering and Ecosystem Restoration. 4 credits. Provides definition, classification, and practice of ecological engineering and ecosystem restoration. Describes general system ecology, ecosystem restoration (i.e., wetland and river systems), and the use of natural processes to provide ecosystem services to society. Provides students with a systems-oriented perspective on designing and managing ecosystems. Students will study principles in designing field ecological studies, ecological models, ecological engineering, and explore practices in sustainable ecological design by carrying out a hands-on experimental design project with the field wetland mesocosm on the Mason campus. One field trip is required part of the course. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: CHEM 211 and EVPP 301 or BIOL 308; or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 361: Introduction to Environmental Policy. 3 credits. Environmental politics and policymaking since the 1970s. Primary focus on United States, with some discussion of global issues. Examines policy strategies and outcomes, ethical and economic debates, political controversies, lawmaking and enforcement, and role of key players. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to GOVT 361.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 30 credits.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 362: Intermediate Environmental Policy. 3 credits. Examines environmental issues building on learning objectives from EVPP 361. Focuses on environmental and policy issues in the US and internationally, exploring the politics of nature and the interaction of environmental science and politics and resulting controversy. Risk and uncertainty loom large in most environmental issues. "Natural" disasters as well as direct "man-made" problems will be covered. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to GOVT 362.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: EVPP 361 or GOVT 361 or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 363: Coastal Morphology and Processes. 4 credits. Studies global coastal geomorphology and processes with emphasis on U.S. Atlantic and gulf coasts. Topics include plate tectonics; sea-level changes; sediment supply; impact of waves, tides, and storms; and human activities. Lectures and extended weekend field trips to mid-Atlantic coast. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to GEOL 363.

Recommended Prerequisite: BIOL/EVPP/GEOL 309 or GEOL 317; or 9 credits in geography, including GGS 309.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 377: Applied Ecology. 3 credits.

Introduces ecosystem concepts and applications to natural and managed ecosystems. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 377.

Recommended Prerequisite: 60 credits including 8 credits of biology, geology, or chemistry, or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 378: RS: Ecological Sustainability. 4 credits.

Introduces the concepts and applications of several important topics relating to ecological sustainability. Focuses on the role of soils in maintaining and managing environmental quality. Teaches students how to understand and interpret scientific data presented in various types of literature covering ecological sustainability. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 379.

Mason Core: Capstone (<http://catalog.gmu.edu/mason-core/>)

Specialized Designation: Green Leaf Focused Course, Research/Scholarship Intensive

Recommended Prerequisite: BIOL 308 or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 381: Nature and Culture in Global Wetlands. 4 credits.

A study of internationally important wetland ecosystems of varying types (i.e., Ramsar wetlands). Emphasizes the link between nature and culture of wetlands in different global regions and focuses on understanding its critical role in the conservation and wise use of global wetlands. The

course aims to train the next generation of higher education in the field of eco-cultural literacy and resilience of global wetlands. It provides students with an opportunity to learn about the environmental history and the changes in the ecology of global wetland ecosystems over the decades of human impacts. The course covers different types of wetland systems and their services to and relationship with humanity. The course includes field trips to local wetlands and nature centers, and one final field trip to a Ramsar wetland - a wetland of an international importance. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Mason Core: Global Understanding (<http://catalog.gmu.edu/mason-core/>)

Recommended Prerequisite: EVPP 108 or BIOL 103, or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 395: *Undergraduate Research in Environmental Science and Policy*. 1-3 credits.

Original research project. May involve field and lab study, computer modeling and analysis, or other original research as appropriate. Research formulated and completed under instructor's guidance. Notes: Culminates in final report. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 10 credits.

Recommended Prerequisite: 45 credits and at least two upper level science lab courses.

Schedule Type: Research

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 396: *Directed Topic in Environmental Science and Policy*. 1-4 credits.

Study of topics not available in fixed-topics courses. May involve readings, lectures, lab assignments, and tutorials as jointly agreed on by student and instructor. Notes: Culminates in term paper, final exam, or both. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 8 credits.

Recommended Prerequisite: 45 credits.

Schedule Type: Independent Study

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

400 Level Courses

EVPP 401: *Integrated Environmental Assessment*. 3 credits.

Presents strategic planning at the regional level, and focuses on the methods, format, and content of a Strategic Environmental Assessment (SEA), also referred to as a programmatic environmental impact statement (PEIS). Students will conduct research and develop their own SEA for Shenandoah National Park (NP). Offered by Environmental

Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: 60 credit hours completed.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 402: *Applied and Industrial Microbiology*. 3 credits.

Biology of microorganisms of ecological and industrial significance. Includes food production, spoilage and preservation, fermentation technology, waste disposal, water purification, biodeterioration, and decomposition. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 402.

Recommended Prerequisite: BIOL 213, 305, 306 or EVPP 210, 305, 306, CHEM 211 and CHEM 213; CHEM 212 and CHEM 214, or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 408: *Mushrooms, Molds and Society*. 3 credits.

Provides a modern, comprehensive knowledge of fungal biology including classification, phylogeny, structure, physiology/metabolism, growth and development, genetics, industrial applications including biotechnology, ecological roles including pathogenic interactions with plants, animals, and man. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 408.

Recommended Prerequisite: EVPP 108 and 109 and 112 and 113 or EVPP 210 or BIOL 213.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 413: *Histotechniques*. 3 credits.

Introduces theory and methods for the preparation of tissue samples from animal or plant specimens for examination with light or electron microscopy. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 210 or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 419: *Marine Mammal Biology and Conservation*. 3 credits.

Covers the evolution, biology, ecology, and behavior of marine mammals from polar bears and sea otters to whales and dolphins. Marine mammal conservation and policy is also a major component of the course; several

lecture sessions are devoted to the issue of whaling, threats to marine mammal populations, and recent conservation issues such as marine mammals and noise pollution. The course also includes a number of guest lectures from a variety of international marine mammal experts. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 454, EVPP 519.

Recommended Prerequisite: BIOL/EVPP/GEOL 309 or BIOL/EVPP 449; and 60 credit hours.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 420: *Marine Mammal Biology and Conservation Field Course*. 1 credit. This course provides laboratory, seminar sessions and field work to accompany EVPP 419-001 - marine mammal biology and conservation. Field work includes several day-long boat trips. The field course may take place in the US or abroad. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 419 or BIOL 454, concurrent enrollment is permitted.

Schedule Type: Seminar

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 421: *Marine Conservation*. 3 credits. Provides an overview of threats to the marine environment, and discusses the scientific, socioeconomic, and political issues behind marine conservation. Covers categories of marine pollutants (chemical, biological, and physical contaminants) and their impacts on the marine ecosystem, as well as impacts on humans (health, social, and economic), threats to key marine species (e.g., coral, sharks, turtles, and marine mammals) and initiatives and laws developed to reduce these threats. Scientific and socioeconomic problems that hinder sustainable fisheries management and the science and policy behind the global warming debate are also discussed. Provides an overview of marine environmental law and policy issues related to marine conservation policy. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 450.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: BIOL/EVPP/GEOL 309.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 423: *Beekeeping and Sustainability*. 3 credits. Lectures and hands-on field experiences examining beekeeping as a tool for sustainable development. Also, they will examine the social impact and implications of beekeeping around the world, and explore its current place in the modern socio-economic structure. Offered by Environmental

Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 427: *Conservation Medicine*. 3 credits.

Presents the trans-disciplinary discipline of conservation medicine, the study of relationships between organism and ecosystem health and environmental conditions. Topics include infectious and noninfectious diseases, pathogens, processes, and impacts on human, biotic, and ecosystem health, and how to address the consequences of diseases to populations and ecological communities. Notes: This course will co-meet with EVPP 527. Undergraduate students in this course will have separate (shorter) reading and writing assignments and will be graded according to a different rubric than the graduate students. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 427.

Recommended Prerequisite: 60 credits and BIOL 213 or BIOL/EVPP 305/306 and BIOL 308 OR EVPP 301, or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 428: *Planetary Health*. 3 credits.

As the pace and scale of human impacts on Earth's natural systems continue to increase, there is growing importance in understanding and quantifying the implications of these accelerating changes for human health. Throughout this course, we will study 'Planetary Health' which addresses the human health impacts of accelerating environmental change through interdisciplinary approaches including environmental science, political science, and public health. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 301/BIOL 308 or BIOL 305/306 or EVPP 305/306 or BIOL/EVPP 318 and 60 credit hours; or Instructor's permission.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 429: *Environmental Science Communication*. 3 credits.

Communicating environmental science is inherently challenging whether in academia, the public policy realm, or to the general public. The aim of this course is to expose students to the multiple ways environmental science can be communicated. Such exposure will be made both through a theoretical approach by examining science communication literature, as well as through practical, hands-on activities and assignments. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: Completion of 60 credit hours.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 430: *Fundamentals of Environmental Geographic Information Systems*. 3 credits.

Provides the basic knowledge to explore complex environmental data sets and relationships among biological, ecological, physical and anthropogenic variables using geographic information systems. Using spatial mapping and exploration tools students will be capable of independent analysis of complex environment. Notes: Previous knowledge of fundamentals of geography, coordinate systems and map projections is an asset. Knowledge of operating systems, text editor and spreadsheet is required. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 108 and 109 and 112 and 113; or EVPP 210 and IT 103; or CDS 130 and 60 credit hours; or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 432: *Energy Policy*. 3 credits.

Overview of economic, political, and technological aspects of energy policy development. Students will examine various energy sources in the context of national and global considerations regarding electricity generation, efficiency and conservation, energy economics, and climate change. Updated yearly. The course may include one field trip. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 60 credits and EVPP 361/GOVT 361, or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 434: *Food-Energy-Water-Climate Nexus*. 3 credits.

Examines resilience and sustainability challenges that involve the food-energy-water-climate nexus, as well as innovative solutions to these challenges. Discussions bridge multiple disciplines, considering the technological, ecological, economic, institutional, and equity dimensions of the nexus in various places around the globe at local and national scales. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to two attempts.

Recommended Prerequisite: One environmental social science course and 60 credits.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 436: *The Human Dimensions of Global Climate Change*. 3 credits. Social science investigation of humans' role(s) in global climate change, including diversity of ecological, cultural and policy issues. Focuses on current science, causes and responses, human rights and social justice, vulnerability of marginalized populations, relevant issues associated with communication and behavior change, place of policy, and the multiple existing and potential roles of academic action. Discussion format. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 336, CLIM 101 and 60 credits, or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 437: *Ornithology*. 4 credits.

Study of evolution, systematics, physiology, ecology and behavior of birds, emphasizing field work. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 437.

Recommended Prerequisite: BIOL 308 or EVPP 301 or equivalent or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 438: *Mammalogy*. 4 credits.

Study of evolution, systematics, physiology, ecology and behavior of mammals, emphasizing field work. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 438.

Recommended Prerequisite: BIOL 308 or EVPP 301 or equivalent or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 439: *Herpetology*. 4 credits.

Study of evolution, systematics, physiology, ecology and behavior of reptiles, emphasizing field work. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 439.

Recommended Prerequisite: BIOL 308 or EVPP 301 or equivalent or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 440: *Field Environmental Science*. 0-4 credits.

Directed field studies emphasizing ecology and behavior. Topics vary but include design of field manipulations, data collection and analysis, and introduction to organisms of study site. Notes: Students bear cost of required field trips. May be repeated with permission of Environmental Science and Policy. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term for a maximum 9 credits. Equivalent to BIOL 440.

Specialized Designation: Topic Varies

Recommended Prerequisite: EVPP 301 or permission of instructor.

Schedule Type: IND/INT #1, IND/INT #2, IND/INT #3, IND/INT #4, IND/INT #5, IND/INT #6, IND/INT #7, IND/INT #8, IND/INT #9, Independent Study

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 441: *Protist Diversity and Ecology*. 4 credits.

This course is designed to examine the diversity and ecology of photosynthetic and non-photosynthetic protists (one of the five Kingdoms of organisms) and cyanobacteria (precursors to protists) primarily distributed in freshwater and marine habitats. The evolution and phylogeny of these related, but relatively distinct organismal groups are highlighted. An ecological perspective is used to explore the diversity and ecological significance of algae which are the main primary producers in aquatic ecosystems and heterotrophic protozoa which play an important role as consumers in microbial food webs. Biotechnological applications of protists such as their potential as energy sources and as building materials is explored as well economic and health concerns caused by harmful and nuisance algal blooms and protozoan parasites are discussed. The laboratory provides students with hands on exercises to sample, view and identify protists as well as experience in laboratory and field methods used. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Registration Restrictions:

Required Prerequisites: ((EVPP 210^C or BIOL 213^C) and (EVPP 301^C or BIOL 300^C)).

^C Requires minimum grade of C.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 442: *Urban Ecosystems and Processes*. 4 credits.

Provides an overview of the challenges and opportunities that urban environments present to the plants and animals inhabiting cities and the ways that those organisms and entire ecosystems respond. Includes ecosystem ecology for engineered ecosystems, along with reviews of urban metabolism, energy budgets, water cycles, and soil ecology. Students design and conduct a small-scale green infrastructure experiment/project on campus. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 442.

Recommended Corequisite: Prereqs: CHEM 211 and CHEM 213; MATH 113 or equivalent; BIOL 308 or EVPP 301; PHYS 243 or permission of instructor.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 445: *Principles of Environmental Toxicology*. 3 credits.

Explores basic principles of toxicology with an emphasis on the environment. Includes the history and scope of the field; absorption, distribution, metabolism and excretion of toxicants; mechanisms of toxic action; genetic toxicology; ecotoxicology as well as specific examples important toxicants. Introduces regulatory toxicology and human and ecological risk assessment. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 210; or EVPP 108 and 109 and EVPP 112 and 113 and CHEM 211 and CHEM 212 and 60 credit hours; or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 449: *Marine Ecology*. 3 credits.

Plants and animals of marine environments and physical and chemical conditions that affect their existence. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 449.

Recommended Prerequisite: BIOL 308 or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 451: *Fungi and Ecosystems*. 3 credits.

Considers impact of fungi on ecosystems in terms of effects on biogeochemical cycling, primary and secondary production, and regulating community structure and populations of individual species through activities as symbionts and parasites. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: EVPP 301 or BIOL 308 or EVPP/BIOL 305/306; or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 456: *Aquatic Invertebrate Ecology*. 4 credits.

Through lecture, field collections, and laboratory study, students will understand phylogeny, physiology, life histories, behaviors, trophic importance, adaptations, conservation significance and response to global environmental change of aquatic invertebrates. Students will

identify invertebrates using appropriate literature and methods and use proper curation to preserve them. Students will become familiar with methods for measuring aquatic invertebrate density, biomass, and diversity. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to two attempts.

Recommended Prerequisite: BIOL 308 or EVPP 301 or permission of instructor

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 460: *Infectious Diseases of Wildlife*. 3 credits.

During this course, infectious diseases of wildlife will be examined with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. We will explore methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined. Note: Course will co-meet with BIOL 560/EVPP 560. Graduate students in this course will be graded according to a different rubric than the undergraduate students. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts. Equivalent to BIOL 460.

Recommended Prerequisite: 60 credits plus BIOL 308 or EVPP 301 or permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 465: *Coral Reef Ecology, Health, and Conservation*. 3 credits.

Students will learn about organisms that comprise and inhabit coral reefs and examine how environmental and anthropogenic stressors affect coral reef ecosystems and human society. Current and potential reef restoration solutions will be discussed. Students will engage in open dialogue on reef conservation-related topics including coral health and disease, fishing practices, and policy at the state, federal, and international levels. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Recommended Prerequisite: Permission of instructor.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 466: *Coral Reef Ecology, Health, and Conservation Lab/Field Experience*. 1 credit.

Students will learn to identify different species of corals, fishes, and other reef organisms in the classroom and in the field. Students will be introduced to scientific field methods, including how to make and record observations while diving/snorkeling. Students will deploy these survey methods in the field to collect and analyze data on coral reef ecosystems. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/>)

[colleges-schools/science/environmental-policy/](http://catalog.gmu.edu/colleges-schools/science/environmental-policy/)). May be repeated within the degree for a maximum 1 credits.

Recommended Prerequisite: Permission of instructor

Recommended Corequisite: EVPP 465, if not taken previously.

Schedule Type: Laboratory

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 475: *Global Biodiversity Governance*. 3 credits.

Study global biodiversity governance from a political/policy science perspective. Regime and governance literature, and empirical examples including intergovernmental policy, such as biodiversity-related climate change policy (REDD+), and certification standards, such as the Forest Stewardship Council (RSC), will be examined, with guest lecturers and a simulation of an intergovernmental negotiation. Designated a Green Leaf Course. Notes: This course will co-meet with EVPP 575. Undergraduate students in this course will be graded according to a different rubric than the graduate students. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: One (environmental) social science course.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 480: *Sustainability in Action*. 4 credits.

Provide students with valuable and tangible experience in practical aspects of realizing sustainability goals and to transfer theory into practice. Allows students to engage in real-world, sustainability-related projects that provide benefits for a target community. Identify and attempt to solve a sustainability-related problem or address a sustainability-related need in a specific target community. Notes: Capstone course for the Sustainability Minor see Environmental Science and Policy department listing for details. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). Limited to three attempts.

Mason Core: Encore: Sustainability, Synthesis (<http://catalog.gmu.edu/mason-core/>)

Specialized Designation: Green Leaf Focused Course, Mason Impact.

Recommended Prerequisite: Completed or concurrent enrollment in all other required Mason Core courses; completion of 60 credits

Schedule Type: Seminar

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 490: *Special Topics in Environmental Science and Policy*. 0-4 credits.

Studies selected topics in environmental science and policy using lectures, guest lectures, student presentations, or laboratory exercises. Notes: Topics vary, but each offering has coherent syllabus. May

be repeated for credit if topics are significantly different. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term for a maximum 8 credits.

Specialized Designation: Topic Varies

Recommended Prerequisite: 60 credits and permission of instructor.

Schedule Type: Lec/Sem #1, Lec/Sem #2, Lec/Sem #3, Lec/Sem #4, Lec/Sem #5, Lec/Sem #6, Lec/Sem #7, Lec/Sem #8, Lec/Sem #9, Lecture, Sem/Lec #10, Sem/Lec #11, Sem/Lec #12, Sem/Lec #13, Sem/Lec #14, Sem/Lec #15, Sem/Lec #16, Sem/Lec #17, Sem/Lec #18

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 491: *Special Topics Lab.* 1-2 credits.

Explores selected in environmental science and policy using laboratory exercises. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term for a maximum 4 credits.

Specialized Designation: Topic Varies

Recommended Prerequisite: 60 credits or permission of instructor

Recommended Corequisite: EVPP 490

Schedule Type: Laboratory

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 494: *Internship.* 1-3 credits.

Involves off-campus, professional student work with approved agencies, institutions, non-profits, or businesses. Work must produce one or more academic products such as: comprehensive report, departmental presentation, poster, or article. At least one substantive piece of work will be assessed for each internship credit being undertaken. Scope of work, credits, and academic product(s) are determined in consultation with the internship instructor. Notes: Credit will be assigned based on the number of hours participating in the internship each week: 1 Credit = 4-6 hours/week, 2 Credits= 8-12 hours/week, 3 Credits= 12-18 hours/week. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 60 credits and permission of instructor.

Schedule Type: Internship

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 495: *Undergraduate Seminar in Environmental Science.* 1 credit. Seminars on selected topics in environmental science, using lectures, guest lectures, student presentations, and discussions of current literature. Note: Topics vary. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 3 credits.

Specialized Designation: Topic Varies

Recommended Prerequisite: EVPP 112 and 113 or EVPP 201 or EVPP 302

Schedule Type: Seminar

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

500 Level Courses

EVPP 503: *Field Mapping Techniques.* 3 credits.

Basic techniques for collecting, recording, and plotting spatial field data, including topographic maps, compass, transit, alidade, and global positioning systems. Field work and field-based research project. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to GEOL 506, GEOL 553.

Recommended Prerequisite: Previous courses in geometry or trigonometry or equivalent; and environmental science, geography, or geology or equivalent.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 505: *Selected Topics in Environmental Science.* 0-4 credits.

Topic depends on instructor's specialty. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term for a maximum 9 credits.

Specialized Designation: Topic Varies

Recommended Prerequisite: A course in Geology or Ecology, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lec/Sem #1, Lec/Sem #2, Lec/Sem #3, Lec/Sem #4, Lec/Sem #5, Lec/Sem #6, Lec/Sem #7, Lec/Sem #8, Lec/Sem #9, Lecture, Sem/Lec #10, Sem/Lec #11, Sem/Lec #12, Sem/Lec #13, Sem/Lec #14, Sem/Lec #15, Sem/Lec #16, Sem/Lec #17, Sem/Lec #18

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 506: *Science of the Environment I*. 3 credits.

Environmental science is explored in this 2-semester sequence providing the foundation in chemistry (I) and biology (II) required for graduate students with social sciences backgrounds seeking a degree and career in environmental science and policy. Notes: For graduate students entering the Environmental Science and Policy or other programs. Not available to students with undergraduate degrees in the natural sciences. This course is in addition to all other degree requirements. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 507: *Science of the Environment II*. 3 credits.

Environmental science is explored in this 2-semester sequence providing the foundation in chemistry (I) and biology (II) required for graduate students with social sciences backgrounds seeking a degree and career in environmental science and policy. Notes: For graduate students entering the Environmental Science and Policy or other programs. Not available to students with undergraduate degrees in the natural sciences. This course is in addition to all other degree requirements. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP 506 or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 515: *Molecular Environmental Biology I*. 3 credits.

Introduces molecular environmental biology covering basic concepts of molecular biology, molecular evolution, and bioinformatics, and application to problems in molecular and environmental biology. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Introductory biology and genetics or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 518: *Conservation Biology*. 3 credits.

Introduction to the science used to identify species in need of conservation, and techniques to manage and protect organisms. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Course in Ecology.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 519: *Marine Mammal Biology and Conservation*. 3 credits.

Covers the evolution, biology, ecology, and behavior of marine mammals from polar bears and sea otters to whales and dolphins. Marine mammal conservation and policy is also a major component of the course; several lecture sessions are devoted to the issue of whaling, threats to marine mammal populations, and recent conservation issues such as marine mammals and noise pollution. The course also includes a number of guest lectures from a variety of international marine mammal experts. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to EVPP 419.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 520: *Marine Mammal Biology and Conservation Field Course*. 1 credit.

This course provides laboratory, seminar sessions and field work to accompany EVPP 519-001 marine mammal biology and conservation.

Field work includes several day-long boat trips. The field course may take place in the US or abroad, including in Scotland at the University (of London) Marine Biological Station, which is equipped with boats and laboratories. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Corequisite: EVPP 519.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Seminar

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 521: *Marine Conservation*. 3 credits.

Provides an overview of threats to the marine environment, and discusses the scientific, socioeconomic, and political issues behind marine conservation. Covers categories of marine pollutants (chemical, biological, and physical contaminants) and their impacts on the marine ecosystem, as well as impacts on humans (health, social, and economic), threats to key marine species (e.g., coral, sharks, turtles, and marine mammals) and initiatives and laws developed to reduce these threats. Scientific and socioeconomic problems that hinder sustainable fisheries management and the science and policy behind the global warming debate are also discussed. Provides an overview of marine environmental law and policy issues related to marine conservation policy. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 524: *Introduction to Environmental and Resource Economics*. 3 credits.

Introduces theory of external costs and benefits, public goods, natural resource management, and benefit and cost analysis for noneconomists. Lecture-discussion format with student presentations and participation. Analytical problems set, short writing assignments, and exams. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Basic algebra skills.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 525: *Economics of Human/Environment Interactions*. 3 credits.

Advanced topics in environmental, natural resource, and ecological economics for noneconomist. Emphasizes sustainability, intergenerational equity, and economic-ecological feedbacks. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: EVPP 524/GGS 524 or equivalent.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 527: *Conservation Medicine*. 3 credits.

Presents the trans-disciplinary discipline of conservation medicine, the study of relationships between organism and ecosystem health and environmental conditions. Topics include infectious and noninfectious diseases, pathogens, processes, and impacts on human, biotic, and ecosystem health, and how to address the consequences of diseases to populations and ecological communities. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 527.

Recommended Prerequisite: Courses in microbiology, ecology, or conservation, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 528: *Planetary Health*. 3 credits.

As the pace and scale of human impacts on Earth's natural systems continue to increase, there is growing importance in understanding and quantifying the implications of these accelerating changes for human health. Throughout this course, we will study 'Planetary Health' which addresses the human health impacts of accelerating environmental change through interdisciplinary approaches including environmental science, political science, and public health. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Courses on Conservation Medicine, Evolution, Disease Ecology, One Health or Conservation Biology, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 529: *Environmental Science Communication*. 3 credits.

Communicating environmental science is inherently challenging whether in academia, the public policy realm, or to the general public. The aim of this course is to expose students to the multiple ways environmental science can be communicated. Such exposure will be made both through a theoretical approach by examining science communication literature, as well as through practical, hands-on activities and assignments. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 530: *Evidence-Based Environmental Policymaking*. 3 credits.

Longstanding calls for a "new social contract for science" demand that environmental scientists help meet societal needs by providing information to address global problems such as biodiversity conservation and climate change. But scientists' generation of what they perceive to be useful research doesn't necessarily equate to its usability in policy decisions. Through readings, guest lectures, and a variety of hands-

on assignments, this course will explore the meaning of "evidence-based policymaking," the benefits—and limitations—of using science in decision-making, and ways that individuals and organizations can build capacity, whether within research or policymaking institutions. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 531: *Land-use Modeling Techniques and Applications*. 3 credits.

Surveys literature on spatially explicit empirical models of land-use change. Offers hands-on experience developing and running simple models. Includes statistical models, mathematical programming models, cellular automata, agent-based models, and integrated models. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to GGS 531.

Recommended Prerequisite: GGS 550 or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 532: *Animal Behavior*. 3 credits.

Ecological aspects of animal behavior. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 533: Energy Policy. 3 credits.

Discusses resource options in the context of 3E's: energy security, environment, and economics. Examines how these considerations apply to 3 P's developed by Jennifer Sklarew: priorities, politics, and process. Examines sustainability and environmental angles of resources, reasons for specific nations' policy choices, and possibilities for future energy policies. Considers how energy policies can create cooperation and conflict domestically and internationally. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 534: Food-Energy-Water Nexus. 3 credits.

This course examines resilience and sustainability challenges involving the food, energy water (FEW) nexus, along with innovative solutions to them. Discussions bridge multiple disciplines, considering the technological, economic, and institutional dimensions of the nexus in various places around the globe at local and national scales. Building on these existing empirical cases, students will add their own analysis of a FEW challenge in a place they select. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: One environmental social science course (e.g., policy or economics), or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 536: The Diversity of Fishes. 4 credits.

This course delves into the biology and ecology of fishes. Subjects of this class include fish anatomy, taxonomy, evolution, habitat adaptations, community dynamics, and ecosystem interactions. The course will also touch on human impacts on fishes, and conservation. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Course in ecology or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 537: Ornithology. 4 credits.

Study of evolution, systematics, physiology, ecology, and behavior of birds, emphasizing field work. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Course in ecology or equivalent.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 538: Mammalogy. 4 credits.

Study of evolution, systematics, physiology, ecology, and behavior of mammals, emphasizing fieldwork. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 538.

Recommended Prerequisite: BIOL 303 and BIOL 307 or permission of the instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 539: Herpetology. 4 credits.

Study of evolution, systematics, physiology, ecology, and behavior of amphibians and reptiles, emphasizing field work. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Course in ecology or equivalent.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 542: *Urban Ecosystems & Processes*. 3 credits.

Provides an overview of the challenges and opportunities that urban environments present to the plants and animals inhabiting cities and the ways that those organisms and entire ecosystems respond. Includes ecosystem ecology for engineered ecosystems, along with reviews of urban metabolism, energy budgets, water cycles, and soil ecology. Students design and conduct a small-scale green infrastructure experiment/project on campus. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: CHEM 211, MATH 113 or equivalent, BIOL 308 or EVPP 302, PHYS 243 or equivalent, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 543: *Tropical Ecosystems*. 4 credits.

Terrestrial, aquatic, and marine ecosystems in the tropics, emphasizing plant communities, plant-animal interactions, and role of humans in tropics. Notes: Requires field trip to tropics as part of lab. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 543.

Recommended Prerequisite: A course in ecology and permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 544: *Urban Ecosystems and Processes-Lab/Fields*. 1 credit.

The course describes general ecosystem ecology for engineered ecosystems along with review on urban metabolisms of energy, water, soil, and foods with cultural and historical context. Especially, the course focuses on urban water and soil issues that are critical in urban ecosystem functioning involving streams, rivers, and wetlands. The course also aims to review and discuss numerous cases of urban coupled natural and human (social) processes and their relationship with design elements that can be incorporated into creating functional urban landscape (e.g., green infrastructure). The course will engage students in studying up-to-date information on green infrastructure implementation and applications through field trips. The course provides students with an introduction of systemic, interdisciplinary approach on designing and managing urban ecosystems. The course will involve field/design work on a specific theme for each semester it gets taught. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: CHEM 211, MATH 113 or equivalent, BIOL 308 or EVPP 302, PHYS 243 or EVPP 542 or equivalent; or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 545: *Principles of Environmental Toxicology*. 3 credits.

Explores basic principles of toxicology with an emphasis on the environment, including the history and scope of the field; absorption, distribution, metabolism, and excretion of toxicants; mechanisms of toxic action; genetic toxicology; and ecotoxicology, as well as specific examples of important toxicants. Introduces regulatory toxicology and human and ecological risk assessment. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Courses in ecology, physiology and chemistry; or permission of instructor

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 549: *Marine Ecology*. 3 credits.

Presents the Ecology of Marine Ecosystems including from the intertidal zone to the deep sea, and from coral reefs to seagrass

beds and polar seas. Overviews the evolutionary characteristics and ecological processes and community structure of species and their habitats; and special problems that confront marine organisms due to anthropogenic change. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP or BIOL 308 and BIOL/EVPP/GEOL 309 (or the equivalent), or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 550: *Waterscape Ecology and Management*. 3 credits.

Field and laboratory approaches to freshwater ecology with emphasis on study design, sampling methods, laboratory and data analysis, and report writing. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 550.

Recommended Prerequisite: General Chemistry and a course in ecology.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 551: *Fungi and Ecosystems*. 3 credits.

Considers impact of fungi on ecosystems in terms of effects on biogeochemical cycling, primary and secondary production, and regulating community structure and populations of individual species through activities as symbionts and parasites. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 559.

Recommended Prerequisite: BIOL 304 and/or a course in microbiology or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 555: *Lab in Waterscape Ecology*. 1 credit.

Field and laboratory approaches to freshwater ecology with emphasis on study design, sampling methods, laboratory and data analysis, and report writing. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 555.

Recommended Prerequisite: EVPP 550 or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 556: *Aquatic Invertebrate Ecology*. 4 credits.

Through lecture, field collections, and laboratory study, students will understand phylogeny, physiology, life histories, behaviors, trophic importance, adaptations, conservation significance and response to global environmental change of aquatic invertebrates. Students will identify invertebrates using appropriate literature and methods and use proper curation to preserve them. Students will become familiar with methods for measuring aquatic invertebrate density, biomass, and diversity. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 560: *Infectious Diseases of Wildlife*. 3 credits.

Examines infectious diseases of wildlife with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. Explores methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined. Note: Course will co-meet with BIOL 460/EVPP 460. Offered

by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 560.

Recommended Prerequisite: Courses on evolution, ecology, zoology, and conservation biology or permission of the instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 563: Coastal Morphology and Processes. 4 credits.

Studies global coastal geomorphology and processes, emphasizing U.S. Atlantic and gulf coasts. Topics include plate tectonics; sea-level changes; sediment supply; impact of waves, tides, storms; and human activities. Lecture, extended weekend field trips to mid-Atlantic coast. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to GEOL 563.

Recommended Prerequisite: Course in Geology, Oceanography, Marine Science, or Physical Geography; or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 566: Coral Reef Ecology, Health, and Conservation. 3 credits.

Students will learn about organisms that comprise and inhabit coral reefs and examine how environmental and anthropogenic stressors affect coral reef ecosystems and human society. Current and potential reef restoration solutions will be discussed. Students will engage in open dialogue on reef conservation-related topics including coral health and disease, fishing practices, and policy at the state, federal, and international levels. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 567: Coral Reef Ecology, Health, and Conservation Lab/Field Experience. 1 credit.

Students will learn to identify different species of corals, fishes, and other reef organisms in the classroom and in the field. Students will be introduced to scientific field methods, including how to make and record observations while diving/snorkeling. Students will deploy these survey methods in the field to collect and analyze data on coral reef ecosystems. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Permission of instructor.

Recommended Corequisite: EVPP 566, if not taken previously.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Post-Baccalaureate or Non-Degree Undergraduate degrees may **not** enroll.

Schedule Type: Laboratory

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 572: Tools and Techniques for International Development. 3 credits.

Systemic and comprehensive understanding of key concepts and skills essential to effective project management in international development. The skill set learned is oriented towards a 'how-to: do/functional' approach that can be applied to projects on environment, poverty reduction, green growth, health, climate change adaptation and mitigation, social development and more. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 575: Global Biodiversity Governance. 3 credits.

Study global biodiversity governance from a political/policy science perspective. Regime and governance literature, and empirical examples including intergovernmental policy, such as biodiversity-related climate change policy (REDD+), and certification standards, such as the Forest Stewardship Council (FSC), will be examined, with guest lecturers and a simulation of an inter governmental negotiation. Designated a Green Leaf Course. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>).

catalog.gmu.edu/colleges-schools/science/environmental-policy/). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: One (environmental) social science course.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 577: Biogeochemistry: A Global Perspective. 3 credits.

Structure and function of ecosystems, their interactions as components of landscapes, and contributions to the global environment.

Emphasizes biogeochemical cycles of natural, disturbed, and managed ecosystems, and integration at landscape and global level as related to current ecological problems such as transfer of nonpoint source pollutants, atmospheric deposition, stratospheric ozone depletion, and global change. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: A course in ecology and a course in chemistry, or Permission of Instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 581: Estuarine and Coastal Ecology. 3 credits.

Emphasizes marine biology of estuarine and coastal habitats of Chesapeake Bay region, and factors affecting distribution and abundance of organisms. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 581.

Recommended Prerequisite: Course in ecology and permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 582: Estuarine and Coastal Ecology Laboratory. 1 credit.

Provides training in field measurement of physical and chemical parameters, and collection and identification of local organisms. Emphasizes the practice of ecological field research. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 582.

Recommended Corequisite: EVPP/BIOL 581.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

600 Level Courses

EVPP 607: Fundamentals of Ecology. 3 credits.

Overview of concepts in physiological, population, community, ecosystem, biogeographical and human ecology. Notes: Restricted to graduate students with little or no background in ecology. Students who have taken BIOL 307 or the equivalent elsewhere are ineligible for this course. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 607.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 608: Introduction to Environmental Social Science. 3 credits.

The course Environmental Social Science - ESS - aims to provide insight into the some of the most relevant social sciences and social scientific perspectives for studying environmental issues. The course introduces students to different social scientific disciplines. They will

also learn about different social scientific theoretical perspectives and concepts, which they will apply in a research project. Designated a Green Leaf Course. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 610: *Bioremediation: Theory and Applications*. 3 credits.

Provides basis for understanding proper application of bioremedial technologies to treatment of hazardous wastes. Includes evaluation of data to determine successful treatment. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Course in microbiology and either organic chemistry or biochemistry or Permission of Instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 615: *Molecular Environmental Biology II*. 4 credits.

Applied course covering theory and methodology of molecular environmental biology, including analysis of selected case studies in conservation biology of macro-organisms, molecular systematics, and microbial ecology. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP 515 or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 619: *The Challenge of Biodiversity*. 3 credits.

The Challenge of Biodiversity examines the science and policy of biodiversity conservation, through case studies, current events, guest speakers, class discussion, reading and assignments. Emphasis is placed on problem solving, communication skills and critical thinking. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: 6 credit hours of graduate course work or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 620: *Development of U.S. Environmental Policies*. 3 credits.

Examines nature and historical development of environmental policy in the United States, including consideration of social, political, economic and environmental factors, and ways it is expressed and implemented. Also considers sustainability and emerging issues. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 8 graduate credits including graduate course in policy process and course in ecology; or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 621: *Overview of Biodiversity Conservation*. 3 credits.

Lectures, reading assignments, class discussions, and orally presented and written case studies to explore what biodiversity is, why it is important, how conservation has evolved, and status today. Offered

by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: 8 credits of graduate environmental policy and/or science, including ecology, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 622: *Management of Wild Living Resources*. 3 credits.

Examines management of different types of wild living resources: animal and plant, aquatic and terrestrial. Reviews status of resources, analyzes factors that have led to present situation, and considers what may be required to achieve effective and sustainable management. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 8 graduate credits of ecology or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 623: *Translating Environmental Policy into Action*. 3 credits.

Guest lecturers, class discussions, written and orally presented case studies, and assigned reading to identify and analyze factors involved in moving from science and policy to concrete action. Provides understanding of basic principles, skills, and strategies. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: 8 credits of graduate environmental policy and/or science, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 626: *Environment and Development in Asia*. 3 credits.

Examine environment and development in selected countries of South, Southeast, and East Asia. Reviews relationship between environment and development, considers background and history leading up to the present, and considers requirements to achieve more effective and sustainable results. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: A course in policy process, a course in international development and a course in ecology, or Permission of Instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 627: *Environmental Policy in Latin America*. 3 credits.

Examine environmental policy in Latin America. Reviews evolution of environmental policy and relationship between environment and development, considers background and history leading up to the present, and considers requirements to achieve more effective and sustainable results. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 8 graduate credits in policy process, international development, and ecology; or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 628: *Environment and Development in Africa*. 3 credits.
Examine environment and development in sub-Saharan Africa. Reviews relationship between environment and development, considers background and history leading up to present, and considers requirements to achieve more effective and sustainable results. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Recommended Prerequisite: 8 graduate credits in policy process, international development, and ecology; or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 630: *Methods and Logic of Social Inquiry*. 3 credits.

Emphasizes gathering, interpretation, and evaluation of scientific evidence. Develops critical thinking skills and covers logic of scientific inquiry, including various data collection methods such as experiments, observational research, and Q methodology. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: An undergraduate course in statistics and research methods or Permission of Instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 631: *Spatial Agent-based Models of Human-Environment Interactions*. 3 credits.

Discusses key challenges in spatial modeling of human-environment interactions. Reviews agent-based modeling applications in urban and rural interactions, agriculture, forestry, and other areas. Hands-on development of simple ABM models, and investigation of links between GIS and ABM. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to GGS 631.

Recommended Prerequisite: EVPP 531 or CSS 600 or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 632: *Qualitative Research Methods for Environmental Scientists*. 3 credits.

Course engages questions of qualitative research methods for scientists conducting human-environment research. Focuses on tools to investigate the human-environment nexus, including community-based conservation and management research and decolonizing methodologies. Students discuss and practice 'triangulation'-- the integration of qualitative and quantitative methods-- a necessary skill for environmental/human-environment research. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 635: *Environment and Society*. 3 credits.

Human-environment interactions in human ecology perspective, historical basis of human environmental impact, indigenous and nonindigenous worldviews in context of modernization, environmental degradation and globalization, and contemporary policy and research initiatives geared toward resilience and sustainability. Discussion format. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Specialized Designation: Green Leaf Focused Course

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 636: *Gender, Race, and the Natural World*. 3 credits.

Advanced study of links among gender, race, and nature using social-psychological framework, original sources, and seminar and discussion. Analyzes ideologies that underpin the interlocking narratives of gender, race, and nature, and examines role of science in producing these ideologies. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture**Grading:**

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 637: *Human Dimensions of Climate Change*. 3 credits.

Examines human dimensions of climate change, biodiversity loss, ozone depletion, and related anthropogenic alterations of biosphere. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture**Grading:**

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 638: *Corporate Environmental Management and Policy*. 3 credits.

Provides understanding of how environmental issues interact with business strategy decisions. Emphasizes learning about proactive win-win environmental management strategies being implemented by world's leading firms, and shows how government policies and regulations can be designed to simultaneously promote higher environmental protection and competitiveness. Combines mini lectures, participatory discussions. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture**Grading:**

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 641: *Environmental Science and Public Policy*. 3 credits.

Effects of human activities on environment. Considers airborne, waterborne, and solid waste contaminants with respect to sources, control, and effect on ecosystems and humans. Focus is on scientific and technical aspects of environmental contamination. Includes discussion of science policy related to these topics. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: A course in Ecology or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture**Grading:**

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 642: *Environmental Policy*. 3 credits.

In-depth examination of U.S. efforts since 1970 to mitigate pollution of air, land, and water. Addresses issues of global concern, including biodiversity loss, ozone depletion, and climate change. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to PUAD 642.

Specialized Designation: Green Leaf Focused Course**Registration Restrictions:**

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture**Grading:**

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 643: *Microbial Ecology*. 4 credits.

Studies relationships between microorganisms and their natural environment, and methodology for observing the microbes in nature and the biochemistry of environmental systems. Includes discussion of

the role of microbes both in creating and removing toxic threats in the environment. Laboratory component includes field sampling/analyses and laboratory isolation and identification of microbes as well as measurement of their physiological activities. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 643.

Recommended Prerequisite: A course in microbiology or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 645: *Freshwater Ecology*. 3 credits.

Studies biotic and abiotic interactions that affect structure and composition of freshwater ecosystems. Emphasizes research literature. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP 550 or Permission of Instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 646: *Wetland Ecology and Management*. 3 credits.

Emphasizes structure, functions, and ecological processes of created and natural wetlands from an ecosystem perspective. Students will be expected to develop an understanding of hydrologic, physicochemical, and ecological aspects of wetlands and the management of these systems through in-class and field/lab works. Each student is required to carry out an individual research project that involves field and lab works, and write a research paper. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: BIOL 307 or EVPP 377, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 647: *Wetland Ecology Lab and Field*. 1 credit.

Use laboratory and field work to study the structure and function of wetland ecosystems. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP 646 (formerly EVPP 644).

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 648: *Population Ecology*. 3 credits.

Surveys ecological models and theory. Topics include population growth and regulation, competition, predator-prey, herbivore-plant, and parasite-host interactions, mutualism, and metapopulation ecology. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 648.

Recommended Prerequisite: A Course in ecology or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 650: *Ecosystem Analysis and Modeling*. 4 credits.

Introduces principles, history, and methodologies of systems ecology, emphasizing development and simulation of ecological models for natural resource/ecosystem management, conceptual and symbolic

models, and simulation techniques on microcomputers. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 650.

Recommended Prerequisite: A course in ecology or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Laboratory, Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 651: *Multivariate Data Analysis for Ecology and Environmental Science*. 3 credits.

Provides graduate students in ecology and environmental science with tools needed to analyze multivariate data sets. Topics include classification and ordination. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP 607 or equivalent.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 652: *The Hydrosphere*. 3 credits.

Components and transfer processes within hydrosphere, which consists of aqueous envelope of Earth including oceans, lakes, rivers; snow, ice, glaciers, soil, moisture, ground water, and atmospheric water vapor. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to GGS 656.

Recommended Prerequisite: 2 semesters of calculus and partial differential equations.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 670: *Environmental Law*. 3 credits.

Studies environmental laws such as the National Environmental Policy Act, and regulatory issues such as the Clean Water and Clean Air Acts. Emphasizes critical evaluation of alternatives to unresolved issues in environmental policies. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: Course in Ecology, Environmental Biology, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 675: *Environmental Planning and Administration*. 3 credits.

Examines interaction of man and ecological systems; causes of damage or deterioration in environment; content, oversights, and externalities in management decision processes that affect environment and effectiveness of plan implementation; means of assessing environmental impact; and administrative approaches for minimizing environmental impact. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 677: *Applied Ecology and Ecosystem Management*. 3 credits.

Uses ecological principles to manage natural resources. Emphasizes hierarchical levels of organization within ecological systems, and management of ecosystems to conserve biodiversity, natural resources, and environment. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>).

catalog.gmu.edu/colleges-schools/science/environmental-policy/). May not be repeated for credit.

Recommended Prerequisite: BIOL 607 or EVPP 607 or equivalent.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 682: *Principles of Environmental Conflict*. 3 credits.

Explores the nature and characteristics of environmental conflict and efforts to manage, resolve or transform it. Students will develop a capacity to assess the strengths and weaknesses of environmental conflict resolution processes while learning about best practices for preventing, preparing for, and addressing environmental conflict. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to CONF 682.

Recommended Prerequisite: EVPP 607, CONF 501, and CONF 502, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 683: *Environmental Conflict Resolution: Situation Assessment, Process Design and Best Practices*. 3 credits.

This course explores best practices for managing, resolving, and transforming environmental conflict using environmental conflict resolution (ECR) processes. Nature and dynamics of environmental disputes, methods for assessing conflict situations, and methods for conducting various forms of ECR processes will be covered in the context of selected case studies with emphasis on student involvement. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to CONF 683.

Recommended Prerequisite: EVPP 682 or CONF 682, or permission of instructor.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 684: *Environmental Conflict Resolution and Collaboration: Leadership Practicum/Capstone*. 3 credits.

This course is the capstone course for the Graduate Certificate in Environmental Conflict Resolution and Collaboration. Under supervision of the instructor, students will undertake an assessment of an active environmental conflict and recommend a range of processes that promote identified goals for preferred conflict outcomes. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP 682 or CONF 682, and EVPP 683 or CONF 683.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 692: *Master's Seminar in Environmental Science and Public Policy*. 1 credit.

Explores selected topics in environmental science and public policy using lectures, guest lectures, student presentations, and discussions of current literature. Notes: Topics vary. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term for a maximum 4 credits.

Specialized Designation: Topic Varies

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lec/Sem #1, Lec/Sem #2, Lec/Sem #3, Lec/Sem #4, Lec/Sem #5, Lec/Sem #6, Lec/Sem #7, Lec/Sem #8, Lec/Sem #9, Sem/Lec #10, Sem/Lec #11, Sem/Lec #12, Sem/Lec #13, Sem/Lec #14, Sem/Lec #15, Sem/Lec #16, Sem/Lec #17, Sem/Lec #18, Seminar

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 693: *Directed Studies in Environmental Science and Public Policy*. 1-4 credits.

Studies topic not otherwise available in graduate program. May involve reading assignments, tutorials, lectures, papers, presentations, and lab or field study determined in consultation with instructor. Notes: Short study plan required. May not be used to fulfill explicit undergraduate prerequisites for graduate work. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term for a maximum 8 credits.

Specialized Designation: Topic Varies

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy, Graduate, Junior Plus, Non-Degree or Senior Plus.

Enrollment is limited to Graduate, Non-Degree or Undergraduate level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Research #1, Research #2, Research #3, Research #4, Research #5, Research #6, Research #7, Research #8, Research #9, Research

Grading:

This course is graded on the Graduate Special scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

700 Level Courses

EVPP 730: *Environmental Policy Research in Practice*. 3 credits.

Course is designed for students interested in social science-oriented environmental research. Student learn how to ground their research ideas in social science theory, develop a central research question and construct original research hypotheses that are grounded in social science literature. They also hone their peer reviewing skills by assessing other students' research and offering constructive commentary. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 12 credit hours of graduate course work at Mason or approval of instructor.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Seminar

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 738: *Sustainable Enterprise Theory*. 3 credits.

This course is designed to critically evaluate the scholarly research related to sustainable enterprise. The class provides an overview of the major theories, research designs, and methodologies associated with this emerging research domain. Students apply these theories to develop social science research proposals for empirical investigation. Offered

by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: EVPP 638 Corporate Environmental Management and Policy, equivalent class, or permission of instructor.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 741: *Advanced Topics in Environmental Science and Public Policy*. 0-4 credits.

Studies selected advanced topics in environmental science and public policy. Lectures, guest lectures, student presentations, laboratory exercises. Notes: Topics vary; each offering has coherent theme. May be repeated for credit if topics significantly differ. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term for a maximum 10 credits.

Specialized Designation: Topic Varies

Recommended Prerequisite: Eight hours of graduate coursework in Environmental Science and Public Policy, or permission of instructor.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lec/Sem #1, Lec/Sem #2, Lec/Sem #3, Lec/Sem #4, Lec/Sem #5, Lec/Sem #6, Lec/Sem #7, Lec/Sem #8, Lec/Sem #9, Lecture, Sem/Lec #10, Sem/Lec #11, Sem/Lec #12, Sem/Lec #13, Sem/Lec #14, Sem/Lec #15, Sem/Lec #16, Sem/Lec #17, Sem/Lec #18

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 745: *Environmental Toxicology*. 3 credits.

Studies nature, distribution, and interaction of toxic chemicals released into environment. Topics include acute, subchronic, and chronic toxicity testing; uptake, distribution and metabolism of toxins as well as their distribution in the environment. Emphasizes effects on nonhuman biota, detection and fate of chemicals, and includes discussion of implications for government regulation. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit. Equivalent to BIOL 745.

Recommended Prerequisite: EVPP 445 or EVPP 545 or equivalent; or permission of instructor.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 792: *Seminar in Earth Systems Science*. 2 credits.

Seminar for Earth systems science graduate students with background in major systems. Capstone experience. Seminars presented by faculty and students. Notes: Topics vary from semester to semester. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May not be repeated for credit.

Recommended Prerequisite: 15 graduate credits and courses on the atmosphere, hydrosphere, and lithosphere.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Seminar

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 793: *Research in Environmental Science and Public Policy*. 1-3 credits.

Library, laboratory, or field investigation under supervision of instructor. Notes: Short proposal required. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: 8 graduate credits in EVPP and Permission of Instructor and Chair.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Research

Grading:

This course is graded on the Graduate Special scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 797: *Master's Thesis Proposal*. 1-3 credits.

Work on research proposal that forms basis for a master's thesis. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: 12 credits and permission of major professor.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Research

Grading:

This course is graded on the Graduate Special scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 798: *Master's Research Project in Environmental Science and Public Policy*. 1-3 credits.

Experimental, observational, literature-based, or theoretical research project chosen and completed under guidance of faculty member. Proposal required before enrollment. Comprehensive report acceptable to student's committee required for completion. Notes: Students taking EVPP 798 may receive no more than 6 credits for both EVPP 793 and EVPP 798. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 3 credits.

Recommended Prerequisite: Approved project proposal and permission of instructor and Chair.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Thesis

Grading:

This course is graded on the Graduate Special scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 799: *Master's Thesis in Environmental Science and Public Policy*. 1-6 credits.

Experimental, observational, or theoretical research under instructor's supervision that culminates in production of thesis. Thesis work should be potentially publishable. Notes: No more than 6 credits of EVPP 793 and EVPP 799 may be applied to master's degree. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree.

Recommended Prerequisite: Approved thesis proposal and permission of instructor and Chair.

Registration Restrictions:

Enrollment is limited to Graduate or Non-Degree level students.

Students in a Non-Degree Undergraduate degree may **not** enroll.

Schedule Type: Thesis

Grading:

This course is graded on the Satisfactory/No Credit scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

800 Level Courses

EVPP 894: *Supervised Internship*. 3-12 credits.

Training in application of ecological skills to environmental management and policy under supervision of a qualified environmental scientist at governmental agency, consulting firm, industry, or other acceptable organization. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree for a maximum 12 credits.

Recommended Prerequisite: Permission of student's doctoral committee, graduate program director and department chair.

Registration Restrictions:

Enrollment is limited to Graduate level students.

Schedule Type: Internship

Grading:

This course is graded on the Graduate Special scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

900 Level Courses

EVPP 991: *Advanced Seminar in Environmental Science.* 2 credits.

Topics generally address interface between environmental science and public policy. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the term.

Specialized Designation: Topic Varies

Recommended Prerequisite: 8 hours of Ecology or permission of instructor.

Registration Restrictions:

Enrollment is limited to Graduate level students.

Schedule Type: Lec/Sem #1, Lec/Sem #2, Lec/Sem #3, Lec/Sem #4, Lec/Sem #5, Lec/Sem #6, Lec/Sem #7, Lec/Sem #8, Lec/Sem #9, Sem/Lec #10, Sem/Lec #11, Sem/Lec #12, Sem/Lec #13, Sem/Lec #14, Sem/Lec #15, Sem/Lec #16, Sem/Lec #17, Sem/Lec #18, Seminar

Grading:

This course is graded on the Graduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 998: *Doctoral Dissertation Proposal.* 1-6 credits.

Work on research proposal that forms basis for a doctoral dissertation. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree.

Recommended Prerequisite: Admission to doctoral candidacy.

Registration Restrictions:

Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:

This course is graded on the Satisfactory/No Credit scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

EVPP 999: *Doctoral Dissertation Research.* 1-12 credits.

Research on basic or applied problem in environmental science and public policy. Offered by Environmental Science & Policy (<http://catalog.gmu.edu/colleges-schools/science/environmental-policy/>). May be repeated within the degree.

Registration Restrictions:

Enrollment limited to students with a class of Advanced to Candidacy.

Enrollment is limited to Graduate level students.

Schedule Type: Dissertation

Grading:

This course is graded on the Satisfactory/No Credit scale. (<http://catalog.gmu.edu/policies/academic/grading/>)