ENVIRONMENTAL SCIENCE (ENS)

ENS 099 Concepts of Organic Chemistry (0 credits)
This is an introductory course with emphasis on organic chemistry, including some biochemistry. This course is designed for students who may need undergraduate organic chemistry as a prerequisite for some graduate programs. The chemistry of organic compounds, hydrocarbons and their functional derivatives, stereochemistry, carbonyl containing compounds, structural analysis, and carbohydrates will be discussed.
Prerequisites: One year of undergraduate General Chemistry.

ENS 201 Fundamentals of Environmental Science I (0-4 credits)
An introduction to the basic concepts of environmental biology, chemistry and physics. We will examine living systems and the chemical and physical principles governing the environment that sustains them, using case studies relating to important environmental issues faced by society. Students will learn about the organization of living systems, from organisms to ecosystems, and about how living and non-living elements interact to regulate Earth's systems. We will emphasize how environmental scientists and managers apply this information to understand and design solutions for environmental problems, including unsustainable resource use and recycling, eutrophication and nutrient management, species extinction and conservation, and species invasions and restoration ecology.

ENS 202 Fundamentals of Environmental Science I (0-4 credits)
This continuation of ENS 201 will focus on the biological, chemical, and physical principals governing pollutants in air, water, soil, and food. As in ENS 201, we will use case studies to demonstrate how scientists and managers study and prevent environmental problems. Topics will include acid rain, photochemical smog, ozone depletion, greenhouse gases and the impacts of climate change, energy sources and use, water pollution, and food toxins. Hazard recognition and control are also discussed in terms of toxicology, epidemiology, exposure assessment, and risk assessment.

ENS 326 Geographic Information Systems (3 credits)
This course will teach students how to visualize, explore, query and analyze geographic data. This will allow students to have a better concept of how data about spatial information is used to analyze and solve environmental, economic, social and business questions. The popular desktop GIS program, ArcMAP will be the software used.
Course Rotation: NY and PL: Spring

ENS 349 Environmental Toxicology (3 credits)
This course will progress from the molecular basis of pollutant toxicity to effects at higher levels of biological organization, namely, cellular, whole organism, population, community and ecosystem. Discussion of the major classes of pollutants, their properties, release and environmental transport and fate will be followed by discussion of their biological effects. The course will also examine biomarkers of exposure and effect as well as biomonitoring.
Course Rotation: NYC: Fall and Summer, PLV: Fall and Summer.

Prerequisites: BIO 102, BIO 205, CHE 112, and junior standing.

ENS 486 Research in Environmental Science (3 credits)
Under faculty supervision, students conduct laboratory or field based research and submit a report at the close of the semester. A maximum of two semesters for credit may be elected.
Course Rotation: NYC: Fall, Spring and Summer, PLV: Fall, Spring and Summer.

Prerequisites: Junior standing.

ENS 494 Internship in Environmental Science (3 credits)
A direct experience in the working environment designed to enhance and extend the knowledge gained in the classroom. The student reports to a regular assignment during the term and receives guidance and direction from both a faculty sponsor. The student will submit a report at the close of the semester.
Course Rotation: NYC: Fall, Spring and Summer, PLV: Fall, Spring and Summer.

Prerequisites: Junior standing.

ENS 496 Crrnt Tpcs in Envrnmntl Sci (2 credits)
This course involves student presentations of topical issues in environmental science as well as discussion of current journal and popular press articles on environmental issues.
Course Rotation: NYC: Spring and Summer, PLV: Spring and Summer.