



CERC Certificate Program Spring 2010 Class Schedule

Fundamentals

Introduction to Ecology

Dr. Jenna Lawrence, Columbia University

ENVB 0301

Ecology is the study of the interaction between the living components of the Earth and the environment, including the distribution and abundance of plants and animals and the impact of human activities on these distributions. Ecologists attempt to predict how changes in the environment affect ecological systems. This course first examines ecological hierarchy from the species level through populations, communities and ecosystems. Then, key ecological principles are illustrated with applied examples, ultimately providing students the tools they need to evaluate environmental issues for themselves.

Introduction to Environmental Policy

Andrew Voros, Columbia University

ENVB 0351

This course is an introduction to the formulation of environmental policy. Topics include environmental law, environmental economics, human population growth and public health. This course explores responses to such international environmental problems as biodiversity loss. The central focus will be on political processes, such as how governments negotiate with each other and how international institutions can play a role in solving (or exacerbating) problems. A wide range of social perspectives will be investigated, including those of governments of industrial and developing countries, nongovernmental organizations, scientific experts and industry.

Diversity and Conservation

Dr. Christina Colon, New York Botanical Garden

ENVB 0300

This course investigates the foundations of biological diversity. Beginning at the genetic level and working up to populations, species and ecosystems, lectures and field trips will explore the causes and threats to all levels of biological diversity.

Case Studies

Conservation Medicine

Dr. Peter Dazak and Dr. Alonso Aguirre, Wildlife Trust

ENVB 0306

This course will provide an overview of the principles of conservation medicine and disease ecology, with an emphasis on the effects of disease on human, animal (wild and domestic) and ecosystem health. We will examine the impact of disease on biodiversity and rates of extinction as well as the rise of emergent diseases as a result of various environmental factors.



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Case Studies ctd.

Coral Reefs Ecology: Bermuda

Kaitlin Baird, BIOS
ENVB 0321

Located at the Bermuda Institute of Ocean Sciences (BIOS), this five-day field course introduces students to the world of corals. Through lectures and field and lab work, students will learn the biology and microbiology of corals, the ecology of coral communities, anthropogenic factors that impact coral reefs, and coral reef restoration and sustainability. Daily snorkeling excursions enhance the learning experience.

Forest Management and Conservation

Dr. Matt Palmer, Columbia University
ENVB 0338

Forests are vitally important as habitat for much of the world's terrestrial biodiversity, as sources of timber and food, and for providing services such as carbon storage and water filtration. However, forests worldwide are threatened by overexploitation, conversion, climate change and invasive species. This course will introduce several key issues in forest ecology and management through a local lens. On an all-day field trip to Black Rock Forest, we will study how pathogens and other invasive species affect forest structure and function. Following the field trip, we will scale up from our local observations to consider how these issues will affect forest conservation on a global scale.

Policy and Management

Environmental Entrepreneurship

Stefan Doering, BEST Coaches
ENVB 0349

Humanity, a single species, appropriates 40 percent of the Earth's productivity; still, a billion people live in abject poverty on less than one dollar a day. Therefore, the most effective way to not only protect but also enhance our planet's precious resources is to find better ways to address human needs. The tools of entrepreneurialism can be harnessed to provide powerful solutions to both human and ecological distress. By providing these solutions, visionary entrepreneurs are also able to shift public perceptions and attitudes, demonstrating that human fulfillment and natural integrity can coexist. This course will explore how to stimulate demand for products and services that serve both people and the planet. Students are encouraged to come prepared with entrepreneurial ideas of their own, or at least an understanding of the environmental sector they are most passionate about. We will use our time together to create and build an enterprise that will actualize students' ideas.



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Policy and Management ctd.

Measuring and Communicating Environmental Benefits

John Williams, Columbia University, HDRC Inc.

ENVB TBA

This workshop class will address the current status of environmental initiatives and their role in driving change. Contemporary case studies will be used to to examine life cycle cost analysis, standard vs. green design, cost-benefit analyses, and the value of measuring sustainable return on investment (SROI).

Tools

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Economics, Management, Finance

Sustainable Investing II: Practice (can also count as P)

Cary Krosinsky, TruCost Inc.

ENVB TBA

This course is the second part of a two part series, drilling down further on the financial measurement of environmental factors. Sustainable Investing II can be taken by itself, or can be preceded by taking part in Sustainable Investing I. Students will take the sustainable portfolio constructed in Sustainable Investing I, and look in more depth at specific issues, with an emphasis on how sustainability can be a driver for positive outcomes within Private Equity as well as the opportunities and risks found within Alternative Energy Investment, Fixed Income, Community Investing, Microfinance, Carbon as an Asset Class, Water as an Asset Class and Water Efficiency, Energy Efficiency Financing, Ecosystems Valuation & Biodiversity.

Approaches to Conservation Economics: Market Instruments (can also count as P)

Richard Weihe, RNK Capital

ENVB 0357

The purpose of this course is to introduce students to some of the main large-scale economic market methods used to enact conservation measures. The class will cover the theory and function of large-scale market mechanisms as well as specific existing markets. To further develop understanding of the potential of environmental markets, students will explore the feasibility of applying current methods to existing environmental conditions in order to create new environmental markets.

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Independent Study

Nancy Degnan, CERC, Columbia University
ENVB 0400

Students who wish to conduct an independent project on a conservation issue can have it count towards fulfillment of a Case Study, Policy, or Tools distributional requirement depending on the area of study. There will be no scheduled class meeting but students will undertake study under the guidance of an advisor.