Earth Institute Center for Environmental Sustainability
EARTH INSTITUTE | COLUMBIA UNIVERSITY

Summer Ecosystem Experiences for Undergraduates (SEE-U)

Field Methods in Ecology & Conservation Biology in Jordan
ENVB 2106 & ENVB 2107 (6 credits)
Summer 2015: Arrival Sunday, May 24 – Departure Monday, June 22, 2015

Instructor: Jenna M. Lawrence, Ph.D.
E-mail: jml127@columbia.edu

Teaching Assistant: TBD

Course rationale:
The Summer Ecosystem Experiences for Undergraduates (SEE-U) program provides undergraduate students of all majors with a global understanding of ecology and environmental sustainability. The SEE-U program gives you the opportunity to participate in a combination of lectures and labs, while conducting environmental fieldwork in unique natural settings around the world.

Through a partnership between EICES and The Columbia Global Centers | Middle East, the SEE-U Jordan program provides you with a unique opportunity to study ecosystems, biodiversity, and environmental sustainability in Jordan. You experience wetland, marine, freshwater, desert, and forest ecosystems as you travel the entire country of Jordan from Amman in the north to the coastal regions of Aqaba in the south. SEE-U Jordan uses current issues in Jordanian resource management to explore the interface between science and sustainable development. This program will teach you the fundamentals of ecology, evolutionary biology, environmental science, taxonomy, and experimental design. Ecology and biology coursework is integrated with labs and fieldwork across multiple sites and applied to the study of both marine and terrestrial ecosystems and to the wide variety of flora and fauna found across Jordan's ecosystems. The centerpiece of the program is an individual research project, which takes you through the process of planning, executing, and presenting your own ecological research on a topic of your choice. Guest lecturers from the University of Jordan, Yarmouk University, government, and non-profit organizations are incorporated into the SEE-U curriculum to provide you with a full understanding of current issues in sustainable development including freshwater resource management, desertification, overgrazing, biodiversity conservation, and deforestation in Jordan.

Course description:
With an emphasis on ecological interactions and conservation, this course will introduce students to the enormous diversity of life on Earth, from genes to species to ecosystems, as well as to the field methods used to investigate it. In addition to integrating field and classroom approaches to the study of terrestrial and marine ecology, the course will also use basics of genetics and evolutionary biology to explore how diversity is generated and maintained. Moreover, the course will explore current issues in sustainable development

and resource management in Jordan. The centerpiece of the course will be the individual research project: students will learn how to plan, execute, and present ecological research and will have the opportunity to work with conservation practitioners on cutting-edge projects with real-world implications. No previous knowledge of science is assumed.

COURSE OBJECTIVES

- Appreciate the diversity of taxa and ecosystems on land and in the seas, particularly in Jordan.
- Explore current controversies regarding the sustainable management of water, energy, and biodiversity in Jordan.
- Understand the effects of human activities (both positive and negative) on species persistence and ecosystem functioning.
- Become familiar with methods of research, management, and analysis through exposure to primary literature.
- Gain an understanding of the scientific method and its theoretical underpinnings.
- Become fluent in varied methods of ecological sampling and statistical analyses.
- Learn to present research in both written and oral forms.

Grading:
Grading will be based on quizzes (35%), the individual research project (written proposal and powerpoint presentation; 50%), and attendance and participation (15%).

Required text:
Maani J. 2008. *Field Guide to Jordan*. Maani Publishing.

Faculty statement on academic integrity:
The intellectual venture in which we are all engaged requires of faculty and students alike the highest level of personal and academic integrity. As members of an academic community, each one of us bears the responsibility to participate in scholarly discourse and research in a manner characterized by intellectual honesty and scholarly integrity.

Scholarship, by its very nature, is an iterative process, with ideas and insights building one upon the other. Collaborative scholarship requires the study of other scholars' work, the free discussion of such work, and the explicit acknowledgement of those ideas in any work that inform our own. This exchange of ideas relies upon a mutual trust that sources, opinions, facts, and insights will be properly noted and carefully credited.

In practical terms, this means that, as students, you must be responsible for the full citations of others' ideas in all of your research papers and projects; you must be scrupulously honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet agent. Any breach of this intellectual responsibility is a breach of faith with the rest of our academic community. It undermines our shared intellectual culture, and it cannot be tolerated. Students failing to meet these responsibilities should anticipate being asked to leave the program.

Plagiarism, which is commonly understood as using another's words or ideas as one's own, will be rewarded with an 'F' and will be reported to the Dean of Student Affairs in charge of academic integrity.

For more information see the Columbia University Undergraduate Guide to Academic Integrity at: https://www.college.columbia.edu/academics/integrity.