

Environmental Sciences Field Station: Course Offerings, Summer 2010

Session I Courses (May 29 – June 30, 2010)		Session II Courses (June 27 – July 31, 2010)	
Course Number	Schedule	Course Number	Schedule
ENV 300 Introduction to Environmental Science (4 credits)	TTHSAT	ENV 300 Introduction to Environmental Science (4 credits)	MWF
ENV 305 Environmental Health (3 credits)	MW	ENV 306 GIS & Land Use Decisions (4 credits)	TTHSAT
ENV 310 Introduction to Soil Science (4 credits)	MWF	ENV 410 Agronomy (4 credits)	MWF
ENV 430 Waste Management (4 credits)	TTHSAT	ENV 420 Environmental Chemistry (4 credits)	TTHSAT
ENV 491 Soils and Hydrology (4 credits)	MWF	ENV 490 Principles of Pollution Control (4 credits)	MWF
ENV 492 Wildlife Ecology and Management (4 credits)	TTHSAT	ENV 495 Wetlands and Aquatic Ecology (4 credits)	TTHSAT
ENV 399 Special Topics in the Environment & Natural Resources (1-4 credits)	TBD	ENV 399 Special Topics in the Environment & Natural Resources (1-4 credits)	TBD

ENV 399: Special Topics in the Environment & Natural Resources

A special topics seminar for students interested in natural resources, environmental science or engineering. Its purpose is to allow the offering of advanced and/or related topics not adequately covered in any regular course available to qualified students interested in natural resources, environmental science or engineering. A student may repeat this course with different topics for up to twelve (12) credit hours. Prerequisite: Depends on the topic offered or permission of instructor.

ENV 399 Course Topics Proposed for Summer 2010:

Emerging Green Technologies 4 (3,1)

The emerging green technologies to be discussed in the course include sustainable construction and alternative energy sources. The "why," "what" and "how" for more sustainable construction projects are presented in this course. Students will gain a working understanding of how to minimize the negative impacts of buildings (and other large construction projects) through classroom activities, self-study and group projects. This course will emphasize collaboration and interdisciplinary aspects of design and construction and is also designed to help students prepare for the Leadership in Energy and Environmental Design (LEED) accreditation exam. Concepts of renewable energy will include sources of renewable energy, renewable energy commercialization, renewable energy constraints and opportunities, aesthetics, environmental and social considerations.

Prerequisites: ENV 300 or Instructor permission. Sophomore standing.

Textbook: TBD

[Current syllabus available on the website](#)

Field Botany (credit hours TBD)

Introduction, Objectives, and Learning Outcomes

Plants are the base of the biological food chain and the key player in nutrient cycles of the planet, and as such knowledge of the plant community is important for beginning ecologists to learn about. The objectives of this course in Field Botany are:

- to introduce the life cycles of plants with emphasis on conifers and flowering plants
- to provide an introduction to plant anatomy and physiology in the context of how the plant in the field must interact with its environment
- to build an understanding of the importance of the interaction of plant structure and function
- to learn skills of plant collection, preservation, herbarium use, and identification of plants using standard plant keys
- to learn plant evolutionary relationships

- to learn stories of biology and generate new ideas about them
- to become better observers and questioners.

The course would start with an introduction to plant life cycles which would include microscopic observation of plant structures - very especially flowers. Lab instruction would be followed by field trips to sites throughout the region around Aiken concentrating on sites within the Savannah River Site. Collections made either in the morning or afternoon would be followed by sessions in lab preparing specimens and identifying and recording collection locations. Pairs of students would be expected to build a plant collection of at least 50 species representing 25 families. Each student will carry a field notebook to the field and take notes. Notes will be transcribed in the evening and during lab into a formal field journal.

Ideally two overnight field trips would be planned. One to Sapelo Island and the other to Coweeta in the mountains. Collections would be made in both locations if possible but if not then field notes would be taken on observations in the field, and the new ideas that emerge from student field study.

Prerequisites: ENV 300 or Instructor permission. Sophomore standing.

Textbook: Manual of the Vascular Flora of the Carolinas, Radford, Ahles, and Bell.
Handouts of Plant Structure and Function

Current syllabus available on the website

Introduction to Plant Field Ecology (credit hours TBD)

An introduction to basic principles of ecology. It will include the basic biological and chemical principles necessary to be understood to formulate 'stories in ecology' and to execute field studies of the environment. Each day - either in the morning or afternoon – the class will explore the environment by working in the field either observing elements of the natural environment or collecting data on or related to various components of the environment. The focus of these studies will be plants, and we will try to learn as much as we can about them and their relationships to their environment. The other half day will be devoted to lessons on principles of biology, chemistry, and ecology or lab work on data organization and analysis and sample preparation. All topics and all field work will be taught 'from scratch' so no prior experience in biology or science is necessary.

Prerequisites: ENV 300 or Instructor permission. Sophomore standing.

Textbook: Teaching an Elementary Story of Life: The Web of Biology, Ecology, and Evolution by Fail, Blohm, and Ray.

Current syllabus available on the website