FIND YOUR VOICE. SPEAK YOUR MIND.

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Environmental Science

A. Environmental Science is the study of the interactions between living things and the abiotic natural world. The course explores how living things, and humans in particular, interact with and shape the atmosphere, hydrosphere, geosphere, and biosphere of our planet. We focus both on current events and on how the biosphere has evolved symbiotically over deep geological time. We take advantage, as much as possible, of the natural resources surrounding us here on campus and elsewhere through frequent field walks and field trips. The course also has a collaborative long-term project component that typically focuses on sustainable development.

B. Overarching goals of Envi Sci

1. Familiarize students with the scientific method through direct inquiry and experimentation
2. Convey information regarding the ecosystems in Earth's biosphere and the impacts of human activities on these systems
3. Orient students towards finding creative and effective solutions to our most pressing environmental concerns

C. Methods of inquiry and placed-based learning

1. Individualized inquiry

a) Students are expected to design and complete short-term activities and long-term projects that encourage them to follow their own curiosity b) Students will receive routine 1-on-1 guidance in achieving their project goals

2. Place

a) Students are encouraged to seek out and make use of academic and natural resources in their direct vicinity for inspiration and inquiry

b) Students are encouraged to develop skills for observing interesting local phenomena in the natural world

c) Students are encouraged to understand local land use history and

ecological succession

3. Critical thinking through experience

a) Students develop an understanding of science by first examining their own biases and then building science skills around this understanding b) Projects include an experimental component with student-driven, collaborative design

c) Research typically begins with guided selection and critical evaluation of sources and a review of all findings

d) Replication and refinement of procedures is encouraged, with attention to eliminating or controlling for sources of bias or error

D. Scope and Sequence of Semester 1 Topics and Events

September

Introduction to science and scientific methods and limitations

Examining personal biases

Wilderness concepts and the Myth of Progress

Biology of local flora

Climate change and current events

October

The Anthropocene concept and geological time

Systems Ecology: chemistry and thermodynamics in the

biosphere Biology of local fauna

Population dynamics

November

Biodiversity and Speciation

Evolution and Extinction

Conservation

Local land use history

December

Human health and biodiversity

Globalization, Industrialization, Green Revolution

Emerging infectious diseases