**Program Materials for InTeGrate Workshop on  
Geoscience and the 21st Century Workshop**submitted by  
Kate C. Miller, Dean *May 20, 2013*

**Geosciences:** Undergraduate Program

**Program Title:** Environmental Programs in Geosciences

**Degree:** Bachelors of Science

**Website:** <http://envp.tamu.edu>

**BRIEF OVERVIEW**

The Environmental Programs offer two interdisciplinary degrees that focus on earth systems and how humans are interacting with those systems. The Environmental Geosciences degree is more scientific and technical in orientation, whereas the Environmental Studies degree is oriented more towards policy and social science.

**Design and Assessment:**

**Particular strengths of the program. What can others learn from our design?**

The hallmark of these programs is flexibility. Environmental Geoscience majors take 15 hours in one of five theme areas: climate change, coastal and marine environments, human impact on the environment, or water. Environmental Studies majors balance an education in the geosciences with environmental policy and the social sciences. Both programs allow for internships, research experiences, study abroad, and/or custom course selections.

**What types of students are served by your program?**

Students interested in careers related to environment, or who seek a broad background in science and policy before entering graduate or professional school.

**What are the program level learning goals or outcomes? Please write your learning outcomes in a list form.**

* Students will be able to describe i) the fundamental earth science-based environmental systems, the processes underpinning those systems, the links between them, and the main environmental outcomes, and ii) the fundamental links between environmental science and the public policy arena, and the processes that link public policies and environmental science.
* Students will be able to collect, analyze, and interpret data using appropriate field, laboratory, and/or computational techniques and will be able to communicate their findings and their relevance to environmental issues in written and oral formats to discipline-specific and general audiences.

**What resources informed the development of your learning outcomes?**

These were prepared early in the development of the programs by the program director and advisory committee.

**How do you assess the extent to which your program is meeting its goals?**

Assessment is based on a combination of i) student responses to specific exit survey questions, ii) a consensus report written by the senior class on the merits and deficiencies of the degrees, iii) evaluation of capstone reports prepared by students during their senior year, and iv) evaluation of oral and poster presentations given by students in the program capstone course.

Of course, we also value and apply what feedback we receive from our recent graduates and employers.

**Are there important design features of your program that allow it to meet its goals?**

Flexibility in the curriculum facilitates tailored course plans that are aligned with student interests and career goals.

**How many students graduate from your program per year? Either provide an average or specific number(s) of graduates and the year(s) those numbers are from.**

2009-19, 2010-35, 2011-70, 2012-77

**What do your alumni do upon completion of your program? What careers and fields of employment do they enter into?**

Graduates typically enter some form of entry level environmental scientist or consulting position upon completion of their degrees. Other students continue their education in law, geosciences, or planning.

**Course Diagrams**

Environmental Geosciences

Technical Electives

Choose 4 courses that involve a lab, research, or technical component

Environmental Policy Electives

Choose 2 courses from a list of courses that include economics, political science, urban planning, and human geography

Professionalization & Capstone

* Seminar, 1 course
* Capstone, 1 course

Core Curriculum

* Communications, 2 courses
* American or Texas History, 2 courses
* Government, 2 courses
* Kinesiology, 2 courses
* Social & Behavioral, 1 course
* Humanities, 1 course
* Visual Arts, 1 course

Supporting Science & Math

* Natural Science, 5 courses
* Statistics, 1 course
* Math, 2 courses

Environmental Core

* Introductory/interdisciplinary, 3 courses
* Upper level, 3 courses

Theme electives

Choose 6 courses within one of the following areas:

* Climate Change
* Human Impact on the Environment
* Coastal and Marine Environments
* Biosphere
* Water

Environmental Studies

Environmental Policy Electives

Take 6 courses then choose 3 more courses from a list that include economics, political science, urban planning, and human geography

Free electives

Choose any 3 courses, typically used for internship, study abroad, or towards a minor

Technical Electives

* Intro geoinformatics, 1 course
* Choose 1 course that involves a lab, research, or technical component

Professionalization & Capstone

* Seminar, 1 course
* Capstone, 1 course

Core Curriculum

* Communications, 2 courses
* American or Texas History, 2 courses
* Government, 2 courses
* Kinesiology, 2 courses
* Social & Behavioral, 1 course
* Humanities, 1 course
* Visual Arts, 1 course

Supporting Science & Math

* Natural Science, 1 course
* Statistics, 1 course
* Math, 2 courses

Environmental Core

* Introductory/interdisciplinary, 4 courses
* Environmental change, 1 course
* Upper level, 3 courses

Geosciences electives

Choose 2 science-based geosciences courses