

Unit Plan for Assessing and Improving Student Learning in Degree Programs

**Unit: School of Earth, Society and Environment
Earth Systems, Environment and Society (ESES) BS degree**

Unit Head approval:

Prof. Don Wuebbles

Date:

SECTION 1: PAST ASSESSMENT RESULTS

Not applicable. Unit started in 2007.

SECTION 2: REVISED ASSESSMENT PLAN

(a) PROCESS:

The requirements for satisfying the BSLAS in Earth Systems, Environment, and Society (Sciences and Letters) are developed to satisfy all of the guidelines for undergraduate education at the University of Illinois. The course requirements for this undergraduate major are designed to develop the students intellectually in their ability to read and listen, to write and speak, to observe and respond critically, to think clearly, critically, and creatively, to think quantitatively and qualitatively, and to develop understanding and attitudes appropriate to a graduate of this institution of higher learning.

The ESES course design was headed by an inter-departmental group headed by Prof. Don Wuebbles, and approved by the University and the Illinois Board of Higher Education (IBHE). The assessment plan described here has been adapted from the IBHE submission document by the Associate Director of Academic Affairs, Dr. Jonathan Tomkin, in consultation with the Head and members of the School's curriculum committee.

(b) STUDENT OUTCOMES:

The ESES program has been designed to provide both a unique academic experience and to train scientists and professionals to deal with the physical and human dimensions of complex Earth system and environmental problems. The program aims to develop both breadth and depth. Each graduate should have a holistic knowledge of both the physical science and the social science aspects of the earth system. In addition, all students should develop a specialty in which they have developed a deep understanding of a particular earth system field. As a consequence, we expect our students to be well prepared for a wide range of possible career paths, in either the private or the public sector, as well as for graduate study in a number of disciplinary and interdisciplinary fields.

As a new major, the curriculum of the ESES major has been built around the academic goals of the degree. We also aim to have a flexible degree that meets the needs of our students: it is our goal that students complete cohesive degree programs with a coherent depth of specialty (similar to those found of other degree programs) and yet does not unnecessarily burden the student with a narrow range of required courses. The goal of the program is not to make each student meet an arbitrary list of requirements, but rather to ensure that the goals of the program (and the University and College) are being met.

Ensure LAS and UIUC goals are met.

- The major requirements are organized so that they reflect the LAS general education requirements that ensure students have “the analytical, critical thinking, and communication skills that are essential to success in life and the workplace”.

Provide a flexible degree that is able to meet the professional and personal goals of the student.

- The degree is arranged around two broad concentrations: Science of the Earth System (SES) and Society and the Environment (SAE).
- In advising, we acknowledge that students have diverse backgrounds and allow sensible class substitutions to the course requirements as long as it meets the goal of providing students with the appropriate breadth and depth in Earth Systems.
- Have a wide range of lower level and upper level course options available so as to suit a wide range of student interests and specialties.

Achieve breadth in Earth Systems

- Require Earth Systems seminar course (2 semesters) ESES 200.
- Require lower-level Earth system courses in multiple disciplines (two social, one biological, one physical).
- Require upper-level Earth systems courses in multiple disciplines (one physical, one social).
- Require Earth System data manipulation course (ESES 379 GIS) and encourage computer science course.

Achieve depth in either a Physical or Social Science

- Depending on concentration, require a standard set of introductory core physical or social science classes.
- Take advanced classes (12 hours minimum required) in area of specialty, which may require substantial completion of pre-requisite courses.
- Use course advising to ensure that all students take the necessary courses so that they may attend graduate programs, if that is their interest.

Experience advanced application of Earth System learning

- ESES 400 capstone course, to be satisfied with either individual research, group research, or an appropriate internship.

(c) MEASURES AND METHODS USED TO MEASURE OUTCOMES:

Several methods will be used to judge the success of the program in meeting the outcome goals. As the ESES degree is very broad, the assessment of student outcome will partly be gauged by the students themselves.

1) Curriculum Analysis

The School's curriculum committee will analyze the program offering to make sure that the requirements and the classes taken continue to support the goals of the degree. We will make use of student tracking (see below) to ensure that the classes taken by students continue to satisfy the breadth and depth requirements of the major.

To be performed: every year.

2) Student Tracking

Students enrolled in the program will be encouraged to consult with a School advisor every semester. As part of this consultation process, records will be kept on student progress towards the degree goals through the use of standardized progress surveys. This survey will consist of three parts.

- I. An undergraduate entry survey will be administered upon selection of the major. In particular, this instrument will be used to survey student preparation, as well as academic and career objectives
- II. An on-going student survey will be used to record any changes in career and academic goals, and any problems encountered with the academic program.
- III. An exit survey for students who complete the degree, to be used at the time of graduation. This survey will focus on student satisfaction with the School and University, career plans and employment prospects, and the degree to which the major's goals line up with the experienced reality.

To be performed: every year.

3) Post-graduate survey

Does the degree continue to have relevance as students proceed in their future lives and careers? The post-graduate survey will build on the exit survey. Specific post-graduate issues include the suitability of the student's academic training in comparison to their current employment, what classes the students have found to be

most valuable (and which they value the least), and what classes that would be of value but are not currently part of the curriculum.

To be performed: every year.

SECTION 3 : PLANS FOR USING RESULTS

(a) PLANS:

The management of the ESES OAP, as described above, will be the responsibility of the Associate Director of Academic Affairs for the School. Curriculum change will be done in accordance with the SESE curriculum committee, and the results and analysis of student tracking and surveys will be discussed with the SESE Director. Any planned change in SESE practices that arise from reacting to the OAP results will be performed in consultation with the departments that make up the School through either the SESE curriculum committee or the executive committee, as appropriate.

(b) TIMELINE FOR IMPLEMENTATION:

The student tracking surveys will be developed and administered from the 2008-09 AY onward. Three-year graduate surveys will begin in 2011, as majors will first graduate in the 2008-09 AY. Curriculum analysis is ongoing.