

**Assessment Report for BGES Undergraduate Program in ENVIRONMENTAL SCIENCE:  
27 May, 2004**

**1. Goals**

*Environmental Science majors will possess a broad general knowledge of the fundamental facts and principles in all of the major areas of Environmental Science by the end of their senior year, as well as advanced knowledge in the major areas of Environmental Science, as defined by standard textbooks.*

This goal was developed by the Department: initially by the chair and associate chairs, undergraduate program directors, and the Undergraduate Committee on Curriculum & Academic Standards [UCCAS], then discussed and approved by a formal vote at a faculty meeting. Because of the relatively small number of majors (less than 30) in a program that was initiated only in 2000, the Department decided to use standard textbook topics as the knowledge base. No changes in the goals have been made since that time.

**2. Outcomes**

The Department decided to define outcome measures as *satisfactory improvement in performance on a standardized test from entry to completion of the program*. This outcome measure was adopted by the Department in the same way and at the same time as the determination of the goals.

**3. Research**

The current testing procedure (implemented only since Fall, 2003) uses an objective exam of 60 multiple-choice questions. The questions used in the pool were selected from faculty input and then subsequently approved by faculty that teach in this area. There are two versions of the exam, and they are administered alternately over semesters.

The exam is administered at two time points in a student's career: at entry, operationally defined as the beginning of the first required course for majors (EVS 206, Introduction to Environmental Science), and just before graduation. The last point is administered by requiring all majors to complete a 0-credit course (EVS 499, Exit Evaluation) that consists solely of the assessment examination before graduation.

All of these direct measures are collected as aggregate values for the entire set of students writing the exam in each semester. No attempt is made to track the performance of individual students.

In addition to these direct outcome measures, indirect evidence sometimes comes in the course of informal exit interviews with the Environmental Science Undergraduate Program Director [in the BGES Department, all Environmental Science majors are advised by the same person].

#### **4. Findings**

A set of standard statistics are calculated for each set of data and appropriate comparisons are made. In particular, overall average scores always will be compared between the entry and exit categories as new data accumulate each semester. The only data (Fall, 2003, and Spring, 2004) show average scores of 39.3% and 20.2% at entry (based on data for N=48 and N=48 students, respectively). Unfortunately, no students have completed the program yet who started after the mandatory exit evaluation was introduced (in Fall, 2003).

It is clear that students in the introductory course have poor initial knowledge of environmental science facts and principles.

#### **5. Review**

Results of the data analysis are reviewed by the Undergraduate Program Director, Associate Chair, and Chair, as well as by members of the Department's undergraduate committee (UCCAS). Any significant findings are reported to the faculty generally for discussion and action.

#### **6. Actions**

There are too few results and too few majors in this program to justify any actions at this time.

Anticipated difficulties in ensuring student compliance with taking the outcome assessment exam just before graduation resulted in the creation of the Exit Evaluation course requirement for the major, approved in Spring, 2003.