

Environmental Sciences Undergraduate Program

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This report is the outcomes based assessment of the Environmental Sciences Undergraduate Program by the Environmental Science Steering Committee.

ASSESSMENT

Results of Previous Assessments

- Creation of an Environmental Science Task Force to develop recommendations regarding the administration and support for the Program.
- Review and revision of the curricula for the Environmental Science options by the Environmental Sciences Faculty.
- Development, with the Fire Protection and Safety Technology Faculty, of an academic course that leads to "HAZWOPER-40" certification.
- Development of a course focused on ethical issues associated with the environment.
- A review of quantitative skills required for environmental science professionals.

2002-03 Assessment

In terms of "The Desired Student Outcomes" the measurable standards for the program were met by the 14 seniors enrolled in Environmental Science Applications and Problem Solving (ENVR 4813). The interviews with graduating seniors indicate that they have positive feelings about the program; and their educational experience, including relationships with their advisors and other faculty. These interviews also support implementation of the results of previous assessments.

Planned Efforts

Future efforts should be focused on implementing the results of previous assessments. However, the implementation of any of these efforts requires the commitment of resources beyond the control of the Program in its current condition.

An additional effort should be devoted to monitoring the efforts of the Council of Environmental Deans and Directors to examine and review the curricula of environmental programs of instruction. The Council of Deans and Directors is also examining the opportunities for certification of environmental science professionals. This deserves to be monitored as well.

INFORMATION SOURCES FOR ASSESSMENT

Grades and "Client Reports" from Environmental Science Applications and Problem Solving (ENVR 4813)

Fourteen students were enrolled in Environmental Science Applications and Problem Solving (ENVR 4813) during Spring Term 2003. Students completed projects for the Indian Nations Council of Governments (Characterization of Biogenic Emission Factors Relating to Air Quality Problems in the Tulsa Management Area (TMA)), Oklahoma Department of Agriculture (Analysis of Lagoon and Field Application Odor Abatement Technologies for LMFO's), and United States Environmental Protection Agency – Region 6 (Field Trial of Soil Sampling Procedures for Detecting the Presence of Volatile Hydrocarbon Contaminates). Final grades in the course were A's and B's. Grades were distributed as follows:

9	-	A's
5	-	B's

Client evaluations for the projects (See Appendix A) ranged from 8 to 10 with a mean of 9.3.

Exit Interviews of Seniors at the Time of Graduation

Exit interviews of graduates were conducted by Dean Miller. The results of three interviews were available for this assessment. The interviews indicate a high level of satisfaction with advising, course content, and faculty. Suggestions were offered to strengthen field work and application elements of the curriculum, and increase the course offerings in social sciences in the curriculum. The need for a Program Coordinator was also identified.

Placement Statistics Compiled by the College of Agricultural Sciences and Natural Resources Career Services Office (Appendix B)

The statistical evidence on placement is limited. However the general view is that graduates are continuing their education in nationally ranked graduate programs or finding employment in the environmental science professions. Those seeking employment are finding jobs in a reasonable length of time and at compensation levels above the average for the College.

Recruitment and Retention Data Compiled by the College of Agricultural Sciences and Natural Resources Student Services Office (Appendix C)

The statistical information compiled by the College of Agricultural Sciences and Natural Resources Student Services Office does not include all of the students who entered the program in 2002-03 only those students who were involved in the College's recruitment program. However, this information is consistent with the observations of faculty. Eight (57%) of 14 students that entered the program in Fall Term 2002 were transfer students and two (14%) of the 14 students that entered the program in Fall Term 2002 had transferred out by the end of Spring Term 2003.

Statistics on Enrollment, Degrees Conferred, Faculty Survey, and Placement Compiled by the College of Agricultural Sciences and Natural Resources for the FAEIS Report (Appendix D)

The current FAEIS report indicates that slightly more than half of the students currently enrolled in the Environmental Sciences Program are Caucasian males and the balance are distributed among gender and racial minorities.

Employer Interviews Conducted by the College of Agricultural Sciences and Natural Resources Career Services Office

The results of employer interviews conducted by the College of Agricultural Sciences and Natural Resources were not available at the time this report was prepared.

Alumni surveys conducted by the Office of University Assessment

No information from alumni surveys beyond that reported in the 2001-02 assessment were available at the time this report was prepared.

RESULTS OF PREVIOUS ASSESSMENTS – STATUS

Environmental Sciences Task Force

In 2001 recommendations were made by the Environmental Sciences Task Force which was convened in response to previous assessments. The following recommendations were presented and accepted by the College of Agricultural Sciences and Natural Resources:

- The Undergraduate Environmental Science Program should remain as interdisciplinary program under the Associate Dean for Academic Programs. – **Implemented**
- A chair position should be established to lead the Environmental Science Program. – **Implemented** (Position of "Director, Environmental Sciences Undergraduate Program" was established and filled in December 2002).
- An Environmental Sciences Undergraduate Program Coordinator position should be established. – **Accepted but not implemented**
- Office space should be provided for the Program Coordinator. - **Accepted but not implemented**
- A Classroom/laboratory and a seminar/conference/workroom should be provided for the Environmental Sciences Undergraduate Program. – **Accepted but not implemented (Efforts have been initiated to develop a proposal for a shared teaching laboratory that will meet the immediate needs of the Program.)**
- An annual cash award of \$1,000 should be established as an incentive and reward for contributions to the Environmental Sciences Undergraduate Program. – **Accepted (The process for making the award has been initiated and will be completed during Fall Term 2003.)**
- An annual review of the Environmental Sciences Undergraduate Program and should be presented to the College's academic department heads and administration. – **Accepted and scheduled for implementation Fall Term 2003**

Development of an Academic Course that Leads to “HAZWOPER-40” Certification

A course titled “Hazardous Waste Site Safety Management” (FPST 4050) has been developed by the Fire Protection & Safety Technology Faculty (██████████) in cooperation with the Environmental Science Steering Committee. The course has been offered twice for academic credit through Engineering Extension and failed to have sufficient enrollment. This is due to the restrictive enrollment requirements of Engineering Extension (minimum and maximum enrollment of 32 students). Efforts are continuing to advertise the course with the Environmental Science Graduate Program and environmental engineering curricula offered by the College of Engineering, Architecture, & Technology with the goal of achieving enrollment requirements.

Development of an Ethics Course Dealing with the Environment

A course “Ethical Issues in Agriculture and the Environment (ENVR 4573)” has been developed, approved for offering, and offered experimentally on two different occasions. Difficulties in securing a “Humanities” designation have arisen and the course may not be offered in the future.

Quantitative Skills Review

A review of the quantitative skills required for environmental science professionals was initiated in 2001 and is continuing. Currently four subject matter areas have been identified and the Steering Committee is in the process of developing specific descriptions for needed courses.