Earth & Environmental Sciences (EES) Masters Degree

REPORT PREPARED by: Ritzi, Robert W.

ACADEMIC YEAR COVERED BY THIS REPORT: 2020-2021

I. PROGRAM LEARNING OUTCOMES

The Earth & Environmental Sciences M.S. degree program prepares students for pursuit of advanced degrees and professional employment in industry, government, and academic sectors. The program includes at least 24 credits of coursework and is focused on a research-based thesis. The Learning Outcomes of the program include 1) Students will master advanced concepts of earth and environmental science and be able to apply those concepts to their own research and that of others. 2) Students will develop a research proposal, independently conduct the research, analyze and interpret data, and write a thesis. 3) Students will publicly present and defend their thesis. The program does not have professional accreditation.

II. PROCEDURES USED FOR ASSESSMENT

A. Direct Assessment

All students in the M.S. degree program are required to conduct original research and write an associated thesis. They also are required to successfully (B-average or better GPA) complete 24 credit hours of graduate-level courses and present and defend their thesis in a public forum. Ever since assessment of the M.S. program began, two components have been used for evaluation 1) A required thesis manuscript is reviewed by the student's advisory committee (usually three department faculty) and assessed as to whether or not it effectively communicated the rationale, approach, results, and interpretations of the research project. 2) The thesis defense was evaluated by each student's supervisory committee and assessed as to whether the student demonstrated an understanding of the methods of inquiry in natural sciences.

B. Scoring of Student Work

Student grades in courses are evaluated on the standard A–F grading scale. Student completion of M.S. thesis defense is evaluated as Pass or Fail by the student's thesis committee. If the committee is satisfied with the student's understanding of their research rationale, methods of inquiry, conclusions drawn from the research, and their conveyance of those in the defense, and upon final submittal of the thesis manuscript, the committee signs the thesis approval form and the major advisor, in consultation with the committee, agrees upon a final grade for six credit hours of thesis research.

C. Indirect Assessment

The department tracks the graduation rate and employment of our students/alumni.

III. ASSESSMENT RESULTS/INFORMATION:

a) Graduation rate b) Students will develop a research proposal, independently conduct the research, analyze and interpret data, and write a thesis. c) Students will publicly present and defend their thesis. d) Indirect Assessment of 2019-2020 graduates

a) Three program students completed their M.S. degrees between the fall 2019 and summer 2020 semesters. b) After feedback and revision, all students produce a thesis document acceptable to all committee members. c) All students demonstrated an understanding of the methods of inquiry in natural sciences during their thesis defenses. They were able to satisfy the committee in their responses to questions from the supervisory committee. Some questions focus on specific details of the results but questions also press the student to discuss an aspect of the results in a way not previously included in the thesis. d) One student is employed with the Ohio Environmental Protection Agency, one is employed by the Leahy Center for Environmental Education at Lake Champlain, VT, and the other moved to Colorado Springs CO and is interviewing with Environmental Services companies in that region

a) Note The Covid-19 pandemic caused delays in the progress of the cohort of 5 students that entered in fall 18 and would normally have been finishing in spring 20, and thus 2 will require additional time and are expected to finish during the 20-21 AY. b) Thesis committee evaluation and feedback and study revision is an important part of the student learning process. c) Students in the M.S. degree program continue to achieve all program-level Student Learning Outcomes. d) Our students continue to be well prepared to embark on career paths in the Earth and Environmental Sciences within both industry and government.

Employment success of prior year's graduates is also shown in appended file.

IV. ACTIONS TO IMPROVE STUDENT LEARNING

This report was completed after the fall 2020 semester, and will be shared with the faculty at the first meeting in Spring 2021. This information and assessment will be used to further evaluate and improve student learning.

V. SUPPORTING DOCUMENTS

Additional documentation, when provided, is stored in the internal Academic Program Assessment of Student Learning SharePoint site.