

# Environment and Sustainability Program - Earth & Envr Resources Management (MEERM)

## Group 4: Cycle 1 - Fall 2017 - Fall 2018

Currently status is: Report Accepted

### ASSESSMENT REPORT FOR Group 4: Cycle 1 - Fall 2017 - Fall 2018

#### Mission Statement

The mission of the Master of Earth and Environmental Resources Management (MEERM) degree within the School of the Earth, Ocean and Environment's Environment & Sustainability section is to educate, using a multi-disciplinary approach, students on the effective management, utilization and sustainability of the resources on and within the earth and its environment.

#### Goal 1.

The MEERM program's primary goal is to prepare students for careers as either 1) managers of the earth's resources and/or 2) environmental managers.

#### Curriculum

To provide the necessary interdisciplinary framework required of managers in these fields, the students are required to demonstrate knowledge of business and policy by taking a minimum of twelve hours of courses from selectives offered and examine the scientific and engineering principles that govern this complex field by completing at least twelve hours of courses from selectives offered in these fields.

By design, no core curriculum is specified except the two required integrative seminars to be taken from the following courses:

- ENVR 700 - Current Topics in Environmental Studies
- ENVR 800 - Seminar in Environmental Studies
- ENVR 804 - Environmental Advocacy Seminar
- ENVR 835 - Seminar in Environmental Ethics
- GEOL 560 - Earth Resource Management
- GEOL 743 - Decision Making in Environmental Resource Management

#### Learning Outcome 1.

Students are required to demonstrate knowledge of business and policy by taking a minimum of twelve hours of courses from selectives offered and examine the scientific and engineering principles that govern this complex field by completing at least twelve hours of courses from selectives offered in these fields.

#### Measures and Criteria

Through the development of a portfolio (normally a collection of the student work), a student's progress toward the learning outcome will be monitored and reviewed specifically during interviews with the graduate director and/or graduate committee which occur during the student's first, second and final semesters. At least 80% of the students will have made acceptable progress towards their degree objectives at each interview. A student should take courses that are selected to meet his career goals and these goals and courses will be reviewed each semester and updated within the portfolio. An exit interview will include a discussion of how the student has achieved this integration as well as a discussion of their thesis and career placement opportunities in a field related to their goals. If less than 75% of students have achieved intergration of coursework, the degree requirements will be reviewed.

#### Methods

All Students will submit surveys to the Graduate Coordinator who will forward them to the Graduate Director and a MEERM graduate review committee during each semester that they are enrolled and the Graduate Director will review their courses, course performance, portfolio, and their career goals relative to when they entered the program. During the student's final semester, an exit interview will occur and the student will be queried regarding his thesis and the broader concepts of integration of elements of the program. The exit survey may be in person or completed electronically to evaluate the interdisciplinary elements of the student's thesis or research and this data will be analysed to determine the student's integration of the science and business/policy elements of the degree.

#### Results

Three (3) MEERM degree candidates defended and completed their degrees during the 2017-2018 academic year. These three (3) students represent one (1) internship and two (2) traditional thesis MEERM degree tracks. All three students met regularly with their respective internship or thesis committees, at least once per year during their tenure at USC and were judged to be making adequate progress towards the degree.

After the three defenses, the student's committees submitted an assessment survey that contained two questions relevant to our progress in LO1: "The student demonstrated an adequate understanding of the interrelationships between the earth and environmental sciences, and business, policy and environmental concepts ....." in and beyond their areas of specialization, respectively. These two questions were scored on a 4 point scale, and the averages across these two questions and across all three graduates was 3.54 out of 4.00. We interpret this high score as indicative of the integrative abilities of the student as evidenced by a thorough and integrative written and oral presentation of the thesis or internship.

#### Use of Results

We find that the high average scores on the assessment surveys of the three 2017-2018 MEERM graduates demonstrate the program's success at providing an integrative academic environment within which the students can diversify their educational background. We will continue to promote this diversity in course offerings by including new areas of diverse coursework

in the SEOE and by taking advantage of newly hired faculty and their expertise for student committees and course offerings.

### Learning Outcome 2.

Students, upon completing the program, should be able to demonstrate that they can effectively integrate business and/or policy concepts with scientific information.

#### Measures and Criteria

Through the development of a portfolio (normally a collection of student work), a student's progress toward meeting his career goals will be reviewed each semester and updated within the portfolio. At least 80 % of students will have made successful progress towards their degree at each interview stage. An exit interview will include a discussion of career placement opportunities in a field related to their goals. Placement in positions related to the program goals will be used to determine success; at least 75% of graduates will have positions in a related field or be in a PhD program within 2 years of graduation as a measure of success.

#### Methods

Students will complete an exit survey during their final semesters which will include questions relative to their career goals. During the student's final semester, the student will be queried regarding his potential or achieved placement upon graduation. The exit interview also determines whether a student has accepted a position of employment. If the student has not yet accepted such position, the program will attempt to stay in contact with the student until such time as the student has accepted a position. The program will maintain job placement data on its alumni to the extent possible to determine the types of careers and whether students entered careers in resource or environmental management. Within 2 years of graduation 75% of graduates will either be employed in a related field or pursuing a PhD.

#### Results

Three (3) MEERM degree candidates defended and completed their degrees during the 2017-2018 academic year. These three (3) students represent one (1) internship and two (2) traditional thesis MEERM degree tracks. All three students met regularly with their respective internship or thesis committees, at least once per year during their tenure at USC and were judged to be making adequate progress towards the degree. Of these three graduates, all are currently employed in areas related to their environmental management degrees.

#### Use of Results

We will continue to monitor our graduating MEERM students and gauge progress to their intended careers in the environmental field(s).

### Goal 2.

The School of the Earth, Ocean and Environment expects students in the MEERM program: To possess a broad understanding of the interrelationships between earth resources, business, policy and environmental concepts.

#### Curriculum

Student must successfully complete a masters thesis or an internship deliverable which integrates these concepts; the success of which is evaluated by an interdisciplinary thesis or internship committee. All students must successfully complete two required seminars, however, students approved for the non-thesis option, must also within those seminars, successfully complete a writing which indicates their proficiency in this integration.

By design, no core curriculum is specified except the two required integrative seminars to be taken from the following courses:

- ENVR 700 - Current Topics in Environmental Studies
- ENVR 800 - Seminar in Environmental Studies
- ENVR 804 - Environmental Advocacy Seminar
- ENVR 835 - Seminar in Environmental Ethics
- GEOL 560 - Earth Resource Management
- GEOL 743 - Decision Making in Environmental Resource Management

### Learning Outcome 1.

Students enrolled in the thesis option must successfully defend a thesis proposal which demonstrates an understanding of the interactions between earth resources, business, policy and the environmental concepts.

#### Measures and Criteria

For students enrolled in the thesis option, the thesis proposal will be evaluated by an interdisciplinary faculty committee. The adviser and thesis committee will be informed by the student or the Graduate Director of the student's goals and the proposal must relate to the curriculum goals identified.

#### Methods

During the thesis proposal defense, each student, in addition to defending the specific proposal, will be required to address a question determined to evaluate the student's broad understanding of the interrelationships learned while in the program. Alternatively, the student may be required to address the question during the thesis defense rather than during the proposal defense. The interdisciplinary committee will evaluate the student's understanding and submit the result to the Graduate Director.

#### Results

Five (5) MEERM degree candidates completed their qualifying examination during the 2017-2018 academic year. These five (5) students represent one (1) internship and two (4) traditional thesis MEERM degree tracks. All five students met regularly with their respective internship or thesis committees, at least once per year during their tenure at USC and were judged to be making adequate progress towards the degree.

All degree candidates were assessed by their thesis or internship committees after successfully completing the comprehensive examination. The assessment survey comprises six (6) discrete questions, each question is graded on a four (4) point scale. The average score on the comprehensive survey was 3.67 across all six survey questions, and each individual student scored an average of at least 3.0 out of a four point scale.

### **Use of Results**

Five (5) MEERM degree candidates completed their qualifying examination during the 2017-2018 academic year. These five (5) students represent one (1) internship and two (4) traditional thesis MEERM degree tracks. All five students met regularly with their respective internship or thesis committees, at least once per year during their tenure at USC and were judged to be making adequate progress towards the degree.

The committees of each students submitted assessment surveys after successful completion of the qualifying (=comprehensive) examination. The average score for all degree candidates was 3.67 out of a possible 4.00. We view this high score as indicative of our success at preparing MEERM degree candidates for success in our graduate program. We will continue to monitor our degree candidates vis the comprehensive assessment and will implement remedial measures if the need arises.

### **Learning Outcome 2.**

All students must demonstrate that they comprehend and can apply the integrated concepts developed within the courses completed by successfully completing a writing which indicates their proficiency in this integration.

### **Measures and Criteria**

Students in the program are required to enroll in two MEERM seminars and writings are required in each. Students in the internship option are also required to complete a deliverable; usually a written work product. To evaluate whether students possess the understanding required, papers will be randomly selected for review by a faculty committee. The review will evaluate whether students integrate business and policy concepts with scientific principles in their evaluation.

### **Methods**

Each semester, several student internship papers or student group papers from a seminar course will be randomly selected and reviewed by MEERM committee to evaluate whether the student writings reflect a broad understanding of the concepts.

### **Results**

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After the three defenses, the student's committees submitted an assessment survey that contained two questions relevant to our progress in LO1: "The student demonstrated an adequate understanding of the interrelationships between the earth and environmental sciences, and business, policy and environmental concepts ....." in and beyond their areas of specialization, respectively. These two questions were scored on a 4 point scale, and the averages across these two questions and across all three graduates was 3.54 out of 4.00. We interpret this high score as indicative of the integrative abilities of the student as evidenced by a thorough and integrative written and oral presentation of the thesis or internship.

### **Use of Results**

We find that the high average scores on the assessment surveys of the three 2017-2018 MEERM graduates demonstrate the program's success at providing an integrative academic environment within which the students can diversify their educational background. We will continue to promote this diversity in course offerings by including new areas of diverse coursework in the SEOE and by taking advantage of newly hired faculty and their expertise for student committees and course offerings.