

Institutional Effectiveness Report 2018-19

Program: Civil and Environmental Engineering MS

College and Department: College of Engineering/Civil Engineering

Contact: Ben Mohr

Mission: The mission of the civil engineering program is to offer the strong academic content necessary to produce well-educated graduates who become innovative and productive members of society. Graduates will possess both the problem-solving skills and the fundamentals of critical thinking and analysis that are crucial for success within the framework of the civil and environmental engineering profession.

Program Goals

1. MS graduates will have the technical competence to be successful in the chosen discipline of civil engineering professional practice or research.
2. MS graduates will have the skills to undertake technically sound analysis independently and present their work at professional meetings or publish their work in scholarly journals.
3. MS graduates will have the technical competence to successfully undertake further advanced study at the doctoral level in civil engineering or a related area, and pursue lifelong learning through professional education.

Student Learning Outcomes

1. MS graduates will demonstrate clear understanding of the chosen discipline of civil engineering covered in course material in the graduate program.
2. MS graduates will apply advanced methods in the development of solutions in the chosen sub discipline of civil engineering.
3. MS graduates will demonstrate the ability to conduct professional presentations or write scholarly manuscripts worthy of publication in peer reviewed journals.

A departmentally developed curriculum map can be found in Appendix 1 that shows the connections between courses and student learning outcomes.

Assessment Methods

1. Alumni Surveys: Approximately every 5 years alumni are given a set of questionnaires to examine (1)

experience, and (3) whether the curriculum objectives and outcomes established is that at least eighty percent of alumni respondents

program provided them with adequate preparation. A lesser

percentage and response on individual questions that constitute less than fifty percent combined “agree or strongly agree” would generate a concern, which would require a review and actions by department ABET advisory committee.

a.

Results

SLO 1 demonstrate clear understanding of the chosen discipline of civil engineering covered in course material in the graduate program.

Summary of Grades and Five Year Average of Course Enrollment in Core MS CEE Courses

| Course | Average Grades (by academic year) | | | | Average number of students |
|--------|-----------------------------------|---------|---------|---------|----------------------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | |

Assessments of MS Thesis Defense Presentations

| Assessed by | Academic Year | Number of Evaluations | Average Score | |
|-------------------|---------------|-----------------------|---------------|-----------------------------------|
| | | | Content | Response to Question and Comments |
| Committee Members | 2015-2016 | 17 | 3.818 | 3.595 |
| | 2016-2017 | 10 | 3.832 | 3.665 |
| | 2017-2018 | 2 | 3.500 | 3.500 |
| | 2018-2019 | 15 | 3.263 | 3.333 |
| Other Faculty | 2015-2016 | NA | NA | NA |
| | 2016-2017 | 1 | 4.000 | 3.000 |
| | 2017-2018 | 1 | 4.000 | 4.000 |
| | 2018-2019 | 2 | 4.000 | 3.500 |

¹ Assessment scale: 1 = Not Acceptable, 2 = Below Expectations, 3 = Meets Expectations, 4 = Above Expectations

SLO 3

Modifications for Improvement:

For SLO 2, it is noted that one of scores fell below 3.0. As the number of evaluations increased (indicating a more thorough representation of actual results), it was noted that the representative scores decreased. This will be monitored in future academy years.

Appendices

1. Curriculum Maps
2. Thesis and Oral Defense Rubric
3. Alumni Survey

Appendix 1: Curriculum Maps

Civil Engineering, MS (Thesis): Mapping of the Graduate Curriculum and Student Learning Objectives

| Course | Title | Student Outcomes |
|--------|-------|--|
| | | SLO 1: Sub discipline course knowledge SLO 2: |

Appendix 2: Thesis and Oral Defense Rubric

Appendix 3: Alumni Survey

Alumni Survey

The survey questions are listed below.

1. Did the CEE MS degree program provide you with the technical knowledge to be successful in civil engineering professional practice?
2. Did the CEE MS degree program provide you with the necessary communication skills to present work at professional meetings and/or publish work in scholarly journals?
3. Did the CEE MS degree program provide you with the ability to undertake technical work independently?
4. Did the CEE MS degree program provide you with the technical competence needed for advanced study at the doctoral level in civil engineering or a related area?
5. Did the CEE MS degree program provide you with the technical competence to pursue lifelong learning through continuing professional education?
6. Have you received any award from a professional civil engineering or related organization? If answered "yes," please provide details.
- 7.