

Institutional Effectiveness Report
2020-21

Program:

project effort, acquire the technical knowledge and skills required for its successful completion, learn to pose the appropriate questions whose answers lead to the advancement of their research or project, and also learn to have meaningful periodic interaction with their advisory committee.

Communication skills are critical to achieving scholarly accomplishments; that is, they are critical to proper technical paper writing and its presentation at conferences, or publication in peer reviewed journals. Hence, at the onset of his/her research or project, a graduate student has to present a proposal on his/her proposed research or project to his/her graduate advisory committee for approval. In addition to judging the intellectual merit of the proposal, the advisory committee also evaluates the oral communication skills of the student and provides feedback to the student soon thereafter through a standardized form adopted by the CEE Department.

PG 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.

Publications and Presentations: A critical element of the process for facilitating a students' development in independent thinking is the requirement that each student work on a research project of real-world significance to the Civil Engineering discipline and to present their work at a peer-reviewed conference and/or publish it in a peer-reviewed journal.

PG 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.

Alumni Surveys: Approximately every 5 years alumni are given a set of questionnaires to examine (1) the appropriateness and relevance of the curriculum structure to their activities after graduation, (2) the extent to which they acquire needed skills for job performance and the degree of engagement in professionally-related learning experience, and (3) whether the curriculum objectives and outcomes are met. The metric that has been established is that at least eighty percent of alumni respondents "agree" or "strongly agree" that the 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 Graduate Affairs committee. The survey statements are as follows:

- a. The CEE MS degree has provided me with skills to be successful in civil engineering professional practice.
- b. The CEE MS degree has made me aware of the present day professional practice in my area of study in civil engineering.
- c. The CEE MS degree has provided me with the necessary skills to present work at professional meetings or publish work in scholarly journals.
- d. The CEE MS degree has provided me with skills to independently undertake technically sound analysis.

- e. The CEE MS degree has provided me with the technical competence needed to successfully undertake further advanced study at the doctoral level in civil engineering or a related area.
- f. The CEE MS degree has provided me with the technical competence to pursue lifelong learning through professional education.
- g.

Results

SLO 1 - demonstrate clear understanding of the chosen sub-

Geotechnical Engineering

Course	Average Grades by academic year (Number enrolled)					Average number of students
	2016-17	2017-18	2018-19	2019-20	2020-21	
CEE 5810/6900 – Foundation Engineering	4.00 (4)	4.00 (1)	N/A (0)	N/A (0)	4.00 (6)	3.67
CEE 6800	4	.	.	0	W	0

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Assessments of MS Thesis Defense Presentations

Assessed by	Academic Year	Number of Students Evaluated	Number of Evaluations	Average Score ¹	
				Content	Response to Questions and Comments
Committee Members	2016-2017	5	13	3.80	3.53
	2017-2018	4	8	3.50	3.63
	2018-2019	7	15	3.26	3.33
	2019-2020	5	15	3.57	3.20
	2020-2021	7	15	3.55	3.64
Other Faculty	2016-2017	1	1	4.00	3.00
	2017-2018	2	2	4.00	4.00
	2018-2019	2	2	4.00	3.50

Assessments of MS Thesis Defense Presentations

Assessed by	Academic Year	Number of Students Evaluated	Number of Evaluations	Average Score ¹		
				Visual Aids	Presenter Preparation	Presentation Mechanics
	2016-2017	5	13	3.80	3.83	3.67

2017-2018

Committee

Members 202018

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: Advanced methods in sub-discipline	SLO3: Communication Skills
Core Sub-Discipline Courses	6-9 credits minimum in subdiscipline	X	X	
Program of Study Courses	15-			

Appendix 2: Thesis and Oral Defense Rubric

**Master of Science in Civil and Environmental Engineering
Oral Defense and Thesis Assessment Form**

Candidate Name: _____ Sub-discipline: _____

Committee Member _____ Faculty _____ Student _____ (Please check one)

Date: _____

Evaluation of Oral Presentation

Oral Presentation Type (circle): Proposal Thesis Defense

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. Would you recommend the TTU CEE MS degree program to other potential candidates in the future?