Graduate Program Assessment Report

Civil Engineering Department, Montana State University, Bozeman, MT

Program Assessed: Masters of Science, Environmental Engineering (CE Dept)

Assessment Period: AY 2014-2015, AY 2015-2016

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Background:

The Civil Engineering Department at Montana State University offers graduate study leading to Master of Science degrees in Civil Engineering, Environmental Engineering, and an interdisciplinary Master of Science degree in Land Rehabilitation. The department also participates in the Doctor of Philosophy in Engineering degree program through the College of Engineering, specifically in the Civil Engineering, Applied Mechanics and Environmental Engineering options.

This Assessment Report specifically addresses the Civil Engineering Department's Master of Science in Environmental Engineering (MSENVE) degree program. This degree program offers major study in bioremediation, drinking water treatment, wastewater treatment, fate and transport of water pollutants in surface and subsurface water, and biological processes in energy extraction related applications. This degree is also awarded through the Chemical and Biological Engineering Department, with students typically taking a combination of courses offered by both departments. Considerable support for the MSENVE degree program is realized through the Center for Biofilm Engineering, which is closely affiliated with the Civil Engineering and Chemical and Biological Engineering Departments.

The Master of Science degree in Environmental Engineering Civil Engineering can be executed following either a Plan A (thesis) or Plan B (professional paper) program. Plan A includes a significant research component conducted under the guidance of a faculty mentor and graduate committee. The Plan A program culminates with a publicly defended thesis. Plan B is coursework oriented, and includes a professional paper completed under the guidance of a faculty advisor. Both Plan A and Plan B programs require a minimum of 31 credits of work, and students must pass a written comprehensive exam at the conclusion of their program. Complete degree requirements for the MSENVE degree program are available at: http://catalog.montana.edu/graduate/engineering/environmental-engineering/

The overarching objective of the MSENVE degree program is to provide an increased depth of knowledge in a student's chosen area of specialization, and an enhanced appreciation for, and the ability to apply critical thinking and research skills in solving complex technical problems. Many students with an MSENVE degree through the Civil Engineering Department do not pursue careers in research, per se. These individuals work in the environmental engineering industry, bringing their knowledge and skills to bear on investigating and solving unique and complex environmental engineering problems.

Assessment Plan:

(Adopted from MSU Standard Assessment Plan)

Program Learning Outcomes

Graduates of the MSENVE degree program will:

a. conduct research or produce some other form of creative work,
b. demonstrate mastery of subject material, and
c. be able to conduct scholarly or professional activities in an ethical manner.

The program outcomes shown here reportedly were developed at Oregon State University. Note: Item "c" is satisfied by ensuring that all graduate students have received training in the responsible conduct of research.

Identified Data Sources

The data sources used for assessment of graduate programs includes:

- Comprehensive examinations
- Thesis defenses

Schedule of Assessment

Assessment reports for the MSCE program will be submitted in September of even-numbered years.

Assessment Outcomes:

Data

Presented in Table 1 is a summary of the MSENVE degree candidates in the Civil Engineering Department for Academic Years 2014-2015 and 2015-2016. This table indicates their Program Plan (Plan A or Plan B) and the outcome of their Comprehensive Exam and/or Thesis Defense.

Assessment

All MSENVE degree candidates in the Civil Engineering Department successfully completed either a thesis (Plan A students) or professional paper (Plan B students) as part of their degree requirements, thus meeting learning outcome (a) above - conduct research or produce some other form of creative work. Referring to Table 1, all MSENVE degree candidates in the Department successfully defended their thesis (Plan A students) and/or passed their comprehensive exam (Plan A and Plan B students), thus meeting learning outcome (b) above – demonstrate mastery of subject material.

Based on these observations, no program changes are necessary at this time to better prepare students to meet the program outcomes.

Table 1. Summary of MSENVE Degree Candidates, CE Department, AY 2014-2015 and 2015-2016.

Candidate Name		Degree	Program Plan	Comp Exam	Thesis Defense
Fall 2014					
Cummings	Robert	MSENVE	B	Pass	n/a
Spring 2015					
Frank	Jacqueline	MSENVE	B	Pass	n/a
Haun	Peter	MSENVE	B	Pass	n/a
Hodgskiss	Logan	MSENVE	A	Pass	Pass
Mery	Stephen	MSENVE	B	Pass	n/a
Fall 2015					
No candidates					
Spring 2016					
Bodle	Kylie	MSENVE	A	Pass	Pass
Moss	Jefferson	MSENVE	A	Pass	Pass

n/a - not applicable