

Assessment Summary, MS Environmental Geoscience, 2018-2019

Overview

We present an assessment from the MS Environmental Geosciences program that evaluates our Program Learning Outcomes 3) Research and 4) Communication
GEOL 691 Thesis AY 2018-2019

Main Findings: Four EES students complete university M.S. theses in AY 18-19. All four theses are of very high quality overall, as evidenced by the scoring summaries in the tables below. Portions of two of the theses are already published in peer-reviewed journals and have hundreds of downloads. One thesis won the Harrington award for best university thesis in the College of Science, among seven considered. As evidence of the preparation these students receive during their M.S. studies, one of the four students is in a fully funded PhD program, while the other three students are employed as highly paid professionals in the discipline at private companies. The research presented in these theses was funded by external organizations, and was carried out in collaboration with scientific research organizations such as the U.S. Geological Survey and Lawrence Livermore National Laboratory. The long-standing success of department faculty in securing external funds for research and involving M.S. students in all aspects of the research is a major factor in the resulting high quality of the research.

Students enter the program with highly variable writing skills, and many, many faculty hours are spent working with students to improve the written product. One student received additional helpful writing skills tutoring from SCAA. It should be noted that the assessment scores reported here are for the final product; earlier drafts would have received lower scores. Overall, the theses show that PLOs 3 and 4 are met or exceeded.

Closing the loop: The intensity of faculty involvement and in some cases, poor preparation in technical writing, means that the process of producing the university thesis is time consuming and available to a relatively small number of students. If poor preparation in technical writing is determined early in a M.S. student's time at CSUEB, additional resources could lead to a more efficient process. These include SCAA tutoring for writing, advising that the student take ENGL 304 (Technical and Professional Writing), or in some cases, earlier involvement of committee members other than the faculty mentor.

The CSUEB Critical Thinking rubric (attached) is used to assess PLO 3 (Research)

Student	Explanation of Issues	Use of Evidence	Context, assumptions	Alternative Viewpoints	Statement of Position	Conclusions and Implications	Sum *46 max)
1	3	4	4	4	4	4	23
2	3	4	4	3	3	4	21
3	3	4	4	3	3	4	21
4	3	4	4	3	4	4	22
						AVERAGE	21.75

