



CALIFORNIA STATE UNIVERSITY, LONG BEACH
VICE PROVOST FOR ACADEMIC PROGRAMS

Memorandum of Understanding

This MOU has been read and approved by:

Department Chair/Program Director: *R. J. Behl* Date: 7/29/2021
Richard Behl

Dean, College of NSM : *Curtis Bennett* Date: 7/29/2021
Curtis Bennett

Vice Provost Academic Programs: *Jody Cormack* Date: 7/29/2021
Jody Cormack



CALIFORNIA STATE UNIVERSITY, LONG BEACH

VICE PROVOST FOR ACADEMIC AFFAIRS

Memorandum of Understanding
Department of Geological Sciences,
College of Natural Science and Mathematics
July 2021

This Memorandum of Understanding outlines the consensus reached by the Department of Geological Sciences, the College of Natural Science and Mathematics, and the Division of Academic Affairs, based on the recently conducted program review (Self-study in October 2019, External review December 2019, and UPRC report in April, 2020). It describes the goals to be achieved, and the actions to be undertaken by all parties to this MOU to achieve these goals, during the next program review cycle. Progress toward goals is to be addressed in an annual report.

The Department offers 2 BS Degrees: the BS in Geology, and the BS in Earth Science. In addition, the Department offers a minor in Geology and an MS degree in Geology.

In response to their last MOU in 2015 the Department has made the following changes: 1) modified the required curriculum for BS and MS, including reducing the number of required upper division courses and allowing more units to be used for electives; 2) they are considering further revision of current curriculum or developing a new undergraduate BS degree in Earth Systems, designed to grow the department and be more relevant to students pursuing a career in geologic hazard mitigation, hydrology, and environmental geology; 3) the department has created a new required course GEOL 420: Geowriting, and included revised PLOs in the self-study; and, 4) the Department is looking to add different specialization by requesting both a Structural Geologist and a Sedimentologist/Stratigrapher.

A number of strengths were identified in the reports.

- There has been a slow but steady decline in average time to degree and total units earned at graduation for majors. The department should keep up its progress in this area through strategic advising and course availability.
- External reviewers were impressed with in the quality of research conducted by graduate students and the general experience provided to them by the department.
- Faculty are committed and passionate about their students, engaging students in meaningful, high-impact experiences (like high-quality field experiences and lab experience/research). External reviewers noted the impressive student outcomes, in terms of the success rates of graduates passing the professional exam.

Areas of Concern and Opportunities for Development were noted in the reports.

- The number of tenured/tenure track faculty is critically low to support the major and a healthy graduate program and will get worse without the replacement of research active faculty.
- The headcount of undergraduate majors has fallen from 64 in Fall 2014 to 46 in Fall 2019 (a 28% decline). Similarly, graduate student headcounts have decreased from 30 in Fall 2015 to 15 in Fall 2019 (a 50% decline). Although, it is noted that the graduate student decline is in line with trends other departments in the university have been facing in the same time period. In addition, the department mentions in the self-study that it purposely has decreased the number of graduate students, but has increased retention and decreased time-to-graduation, which are positive changes.
- The PLOs described in the self-study are not readily available on the department website. The department has recently developed PLOs but has not engaged in direct or indirect methods of assessment, or used assessment findings to close the loop. This was an area of concern in the 2015 MOU and the UPRC again recommends that the department develop and implement an assessment plan for all programs.
- As discussed at length by the external reviewers, the direction of the department seems somewhat tenuous, in terms of curricular emphasis/learning outcomes for the major and future strategies to attract new majors. External reviewers cautioned against the creation of the Earth Systems degree, but suggested other possible strategies, including: reducing the number of required courses to facilitate shorter time to degree/number of units at graduation, reconsidering the allocation of faculty time to the Science Education program, increasing the cap of popular GE classes, and considering alternative modes (online) to popular classes. A strategy for major recruitment could include developing new lower-level courses to attract majors early in their academic career, or to develop a course that could serve ES&P and Geology. External reviewers suggest possibly making two tracks that play to the strengths of current faculty: BS in Geological Sciences, emphasis in Solid Earth and BS in Geological Sciences, emphasis in Hydrogeology and Environmental Geology. UPRC recommends a strategy that would help expose students to the discipline early on, and attract majors that are in a position to declare or switch majors (i.e. attract students still completing their general education requirements).
- In the external review, students noted the lack of gender diversity in faculty, which seemed to be especially troubling for female majors. More broadly but related, it seems that more work needs to be done to improve the climate of the department and to increase efforts towards diversity and inclusion for students and faculty.

It is therefore agreed that the Department will:

1. develop PLOs, and have them publicly viewable on the website. In addition, the Department will consistently engage in a program of assessment of institutional, programmatic, and student learning outcomes across the curriculum. Note that this area is deficient from the prior MOU.
2. provide an annual update (due June 1) on progress made towards the actions agreed to

in this MOU to the CNSM dean, the Vice Provost for Academic Programs, and the Coordinator of Program Review and Assessment. The review cycle will be from 2019-2026. A comprehensive self-study will be due June 2026 for 2026-2027 Academic Year program review process.

3. In light of Beach 2030, consider curricular changes, course offerings and outreach efforts that would attract more majors early in their academic career and continue making progress in reducing time to degree for majors.
 - a. Expand collaboration with local high schools
 - b. Consider courses for matriculated and high-school students to attract students to the major
 - c. Reconsider creation of Earth Systems degree
 - d. Consider BS in Geological Sciences, emphases in Solid Earth and in Hydrogeology and Environmental Geology
4. work with the College to develop a strategic plan that includes future priorities, resources and a hiring plan for tenure track faculty to: replace recent departures and expected retirements, support the graduate program (in teaching, advising, and research), support undergraduate course offerings, and be in line with the university mission of inclusion and diversity.
5. coordinate with the College to develop a plan for diversity in future faculty hires, and to help provide training and resources to support the university's mission of inclusion and diversity and improve the department climate.

It is therefore agreed that the College and University will:

1. Support the department in the development of curricular changes and the development and implementation of assessment.
2. Support the Department in community outreach and interfacing with LBUSD to educate and recruit students to the Geological Sciences program.
3. Work with the Department to develop a strategic plan that includes future priorities, resources and a hiring plan for tenure track faculty.