

# Department of Earth and Environmental Sciences, CSCI



## ASSESSMENT PLAN: M.S. in Geology

Updated Winter 2015 by Jean Moran, Luther Strayer, and Mitchell Craig

### PROGRAM MISSION

CSUEB Missions, Commitments, and ILOs, 2012 version

#### CSUEB Geology M.S. Program Description

To serve graduate students who are employed during the day, all graduate courses in the Department of Earth and Environmental Sciences are offered in the evenings and on weekends. In addition to regular catalog courses, recent graduate seminars and advanced topics courses have dealt with such subjects as sediment transport and modern depositional environments, rock mechanics, applied geophysics, isotope hydrology, tectonics and sedimentation. Additional facilities and part-time employment may be secured through Co-op programs, the Lawrence Berkeley and Lawrence Livermore National Laboratories, and the U.S. Geological Survey in Menlo Park. Candidates for this degree must be prepared to engage in significant individual research. Lately, student research in this department has included such topics as hydrogeology, near surface geophysics, areal geology and slope stability, geochemistry, structural geology, engineering geology, and neotectonics.

### PROGRAM STUDENT LEARNING OUTCOMES (PLOs)

Students graduating with a M.S. in Geology will be able to:

<i>PLO 1</i> <i>ILO 1,6</i>	Attain an advanced understanding of the relationship between geologic materials and their physical and chemical properties. ( <i>Geologic Materials</i> )
<i>PLO 2</i> <i>ILO 1,4,6</i>	Collect, analyze, and interpret data using advanced discipline-specific methods, techniques, and equipment. ( <i>Data &amp; Analysis</i> )
<i>PLO 3</i> <i>ILO 1,2,3,4,5,6</i>	Critically analyze geological and environmental issues through the evaluation of current scientific literature, and present an argument clearly and persuasively in written and oral form. ( <i>Communication</i> )
<i>PLO 4</i> <i>ILO 1,2,4,6</i>	Conduct geologic research, including preparation of a project or thesis; the result should be of high enough quality to be presented at a professional meeting. ( <i>Research</i> )
<i>PLO 5</i> <i>ILO 1,3, 5,6</i>	Understand geologic time, evolution, Earth's place in the Universe, and global-scale processes such as plate tectonics, earth systems interactions, and climate change. ( <i>Geologic Time</i> )

### Year 1: 2013-2014

1. Which PLO(s) to assess	PLO 3 ( <i>Communication</i> ), PLO 4 ( <i>Research</i> )
2. Assessment indicators	GEOL6320 Term Paper, GEOL6414 Precis & Oral Presentation, GEOL6910 Prospectus
3. Sample (courses/# of students)	GEOL6320/10, GEOL6414/15, GEOL6910/2.
4. Time (which quarter(s))	Fall 2013, Winter 2014, Spring 2014
5. Responsible person(s)	Luther Strayer, Jean Moran
6. Ways of reporting (how, to who)	The report was delivered to the Chair, and distributed to the faculty. It was also included within the department's annual program report.
7. Ways of closing the loop	Areas of improvement were discussed at faculty meetings, improvements and revisions to future courses are expected.

### Year 2: 2014-2015

1. Which PLO(s) to assess	PLO 1 ( <i>Geologic Materials</i> ), PLO 5 ( <i>Geologic Time</i> ),
2. Assessment indicators	Course assignments and projects, with department rubric.
3. Sample (courses/# of students)	GEOL6040/14, GEOL6310/10, GEOL6430/15
4. Time (which quarter(s))	Fall 2014, Winter 2015, Spring 2015.
5. Responsible person(s)	Mitchell Craig, Jean Moran, Luther Strayer.
6. Ways of reporting (how, to who)	Reports first to the Chair and then to the entire faculty for comment & discussion. An end-of-year meeting will be devoted to evaluating assessment results and "closing the loop."
7. Ways of closing the loop	Identified "areas for improvement" will be incorporated into modified/updated core courses for future majors

### Year 3: 2015-2016

1. Which PLO(s) to assess	PLO 2 ( <i>Data &amp; Analysis</i> ), PLO 3 ( <i>Communication</i> )
2. Assessment indicators	Course assignments and projects, precis & oral presentations of topical journal articles in the field, MS prospectus, MS project, MS thesis. Department rubrics will be used.
3. Sample (courses/# of students)	GEOL6320/15, GEOL6620/17, GEOL6811/12, GEOL6899/4, GEOL6910/2.
4. Time (which quarter(s))	Fall 2015, Winter 2016, Spring 2016.
5. Responsible person(s)	Luther Strayer, Jean Moran, department faculty.
6. Ways of reporting (how, to who)	Reports first to the Chair and then to the entire faculty for comment & discussion. An end-of-year meeting will be devoted to evaluating assessment results and "closing the loop."
7. Ways of closing the loop	Identified "areas for improvement" will be incorporated into modified/updated core courses for future majors. Issues with the Thesis process will be discussed and acted upon.

### Year 4: 2016-2017

1. Which PLO(s) to assess	PLO 4 ( <i>Research</i> ), PLO 5 ( <i>Geologic Time</i> ).
2. Assessment indicators	Course assignments and projects, precis & oral presentations of topical journal articles in the field, MS prospectus, MS project, MS Thesis. Department rubrics will be used.
3. Sample (courses/# of students)	GEOL6040/15, GEOL6414/15, GEOL6811/12, GEOL6899/5, GEOL6910/3.
4. Time (which quarter(s))	Fall 2016, Winter 2017, Spring 2017.
5. Responsible person(s)	Mitchell Craig, Luther Strayer, and affiliated faculty.
6. Ways of reporting (how, to who)	Reports first to the Chair and then to the entire faculty for comment & discussion. An end-of-year meeting will be devoted to evaluating assessment results and "closing the loop."
7. Ways of closing the loop	We will assess progress made since 2015-2016, adjust strategies. Revise program requirements concurrently with quarter-to-semester conversion.

### Year 5: 2017-2018

1. Which PLO(s) to assess	PLO 1 ( <i>Geologic Materials</i> ), PLO 2 ( <i>Data &amp; Analysis</i> )
2. Assessment indicators	Course assignments and projects, precis & oral presentations of topical journal articles in the field, MS prospectus, MS project, MS Thesis. Department rubrics will be used.
3. Sample (courses/# of students)	GEOL6020/15, GEOL6414/15, GEOL6899/6, GEOL6910/3.
4. Time (which quarter(s))	Fall 2017, Winter 2018, Spring 2018.
5. Responsible person(s)	Luther Strayer, Jean Moran, Mitchell Craig.
6. Ways of reporting (how, to who)	Reports first to the Chair and then to the entire faculty for comment & discussion. An end-of-year meeting will be devoted to evaluating assessment results and "closing the loop."
7. Ways of closing the loop	Assess progress made since 2016-2017, adjust strategies.