

**ASSESSMENT PLAN: B.A. in Geology**

**Date prepared: Spring 2019**

**PROGRAM MISSION**

CSUEB Missions, Commitments, and ILOs, 2012 version

**CSUEB Geology B.A. Program Description**

Geology is the study of the earth and of life and the natural processes occurring on the planet through time. Students learn about the causes of processes such as earthquakes, volcanoes, the formation of mountains, the effect of erosion and deposition, and the formation of rocks and minerals and their uses. Coursework combined with observations on field trips provide Cal State East Bay students with an understanding of natural processes and the human impact on the environment.

The Geology, B.A. program offers the student a greater degree of flexibility and may be more appropriate for those who do not plan to become certified professional geologists or pursue graduate study. (Note: Transfer from the Geology, B.A. to the Geology, B.S. program or vice versa can be accomplished.) Students wishing to do independent geological work professionally or plan on graduate study should enroll in the B.S. program; see Geology, B.S. in the Department of Earth and Environmental Sciences.

**PROGRAM STUDENT LEARNING OUTCOMES (PLOs)**

Students graduating with a B.A. in Geology will be able to:

<i>PLO 1</i> <i>ILO 1, 4,6</i>	Develop foundational knowledge in geologic Materials, Processes & Time (Knowledge), Processes & Time (Knowledge)
<i>PLO 2</i>	Develop fundamental geological field and laboratory skills and computer competence

## PROGRAM MISSION

<i>ILO 1, 3,4,5,6</i>	(Skills)
<i>PLO 3 ILO 1,4,5,6</i>	Integrate and analyze geologic information through synthesis & critical thinking (Analysis)
<i>PLO 4 ILO 1,2,3,4,5,6</i>	Develop oral and written communication, and collaborative skills (Communication)
<i>PLO 5 ILO 1,2,3,4,5</i>	Understand the impact of the Earth Sciences on local-to-global sustainability and their role as an ethical scientist (Global)

## Year 1: 2018-2019

1. Which PLO(s) to assess	PLO2 (Skills), PLO3 (Analysis)
2. Is it aligned with an ILO?	Yes
3. If yes, list ILO.	ILO1: Critical Thinking (361) ILO2: Communication (381)
4. Course name and number	GEOL 361 - Igneous & Metamorphic Petrology GEOL 381 - Structural Geology
5. SLO's from course	GEOL 361: Identify and interpret important minerals and textures in both hand samples and thin sections. GEOL 381: Analyze planar & linear field data by orthographic & stereographic methods, and 3-point problems.
6. Assessment Activity	Data analysis & Final Project
7. Assessment Instrument	Department Rubric
8. How data will be reported	Quantitative, report to include proportion of students in each level 1-5 (5 mastered)
9. Responsible person(s)	Bruce Pauly, Jose Rosario
10. Ways of closing the loop	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." 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 2: 2019-2020

1. Which PLO(s) to assess	PLO1 (Knowledge)
2. Is it aligned with an ILO?	Yes
3. If yes, list ILO.	ILO6: Specialized Knowledge (360 & 371)
4. Course name and number	GEOL 360 - Mineralogy and Optical Crystallography GEOL 371 - Sedimentary Geology and Stratigraphy
5. SLO's from course	GEOL 360: Identify key minerals in thin section using a petrographic microscope. GEOL 371: Collect lithostratigraphic data from field sites to construct cross-sections and stratigraphic columns.
6. Assessment Activity	Practicum; Final Project
7. Assessment Instrument	Department Rubric
8. How data will be reported	Quantitative, report to include proportion of students in each level 1-5 (5 mastered)
9. Responsible person(s)	Bruce Pauly, Jose Rosario
10. Ways of closing the loop	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." 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 3: 2020-2021

1. Which PLO(s) to assess	PLO4 ( <i>Communication</i> ), PLO5 ( <i>Global</i> )
2. Is it aligned with an ILO?	Yes
3. If yes, list ILO.	ILO5 Sustainability (381); ILO2: Communication (497)
4. Course name and number	GEOL 381 – Structural Geology GEOL 497 – Issues in Geosciences GEOL 499 - Capstone
5. SLO's from course	GEOL 381: Demonstrate knowledge of the various structural styles associated with plate boundaries and within continents and ocean basins. GEOL 497: Varies depending on topics covered GEOL 499: Demonstrate the ability to gather, evaluate and articulate environmental geosciences information through advanced written and oral communication.
6. Assessment Activity	Precis & Oral Presentations; Final Project
7. Assessment Instrument	Department Rubric
8. How data will be reported	Quantitative, report to include proportion of students in each level 1-5 (5 mastered)
9. Responsible person(s)	Varies by Semester, Luther Strayer
10. Ways of closing the loop	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." 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: 2021-2022

1. Which PLO(s) to assess	PLO2 ( <i>Skills</i> ), PLO3 ( <i>Analysis</i> )
2. Is it aligned with an ILO?	Yes
3. If yes, list ILO.	ILO2 Communication (260); ILO1 Critical Thinking (297)
4. Course name and number	GEOL 210 – Physical and Environmental Geology GEOL 297 - Introductory Field Experience
5. SLO's from course	GEOL 210: Identify and analyze earth materials and understand their origins, uses and implications. GEOL 297: Identify, measure and collect data from environmental systems using standard geologic and environmental tools and methods to construct basic surface distribution maps.
6. Assessment Activity	Mineral and Rock identification quizzes; Field Mapping Project
7. Assessment Instrument	Department Rubric
8. How data will be reported	Quantitative, report to include proportion of students in each level 1-5 (5 mastered)
9. Responsible person(s)	Mitch Craig, Luther Strayer, Jean Moran, Jose Rosario
10. Ways of closing the loop	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." 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 5: 2022-2023

1. Which PLO(s) to assess	PLO2 ( <i>Skills</i> ), PLO3 ( <i>Analysis</i> )
2. Is it aligned with an ILO?	Yes
3. If yes, list ILO.	ILO1 Critical Thinking (361); ILO4 Collaboration (397);
4. Course name and number	GEOL 361 - Igneous and Metamorphic Petrology GEOL 397 - Adv. Field Experience Project
5. SLO's from course	GEOL 361: Understand field relationships between igneous, metamorphic, and sedimentary rocks. Interpret igneous rock phase diagrams and petrogenesis in terms of current models. GEOL 397: Compile and construct syntheses based on field observations, data, subsequent analysis, and peer/group interaction.
6. Assessment Activity	Final Project & Oral Presentations; Final Group Mapping Project
7. Assessment Instrument	Department Rubric
8. How data will be reported	Quantitative, report to include proportion of students in each level 1-5 (5 mastered)
9. Responsible person(s)	Bruce Pauley, Luther Strayer, Jean Moran, Jose Rosario, Mitch Craig
10. Ways of closing the loop	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." 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.