

# Comprehensive Program Review Report



## Program Review - Geology

### Program Summary

#### 2021-2022

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**What are the strengths of your area?:** The geology/earth science department trades largely in rigorous general education science courses that are offered at all COS campuses. Average student success rates in geology classes reside in the middle range of the Science Division success rates (generally higher than Astronomy, Biology, Chemistry, and Physics, but lower than Earth Science, Geography, Meteorology, Natural Science and Physical Science). Geology and Earth Science FTES/FTEF ratios are approximately equivalent to those of the other lab-oriented departments (biology and chemistry), but lower than those of the non-lab science offerings. Field trip courses offer students experiential learning opportunities to explore the classic geology of California and the geological underpinnings of its population.

**What improvements are needed?:**

1. Student success:

Student success (including EWs) in geology courses dropped during emergency on-line instruction beginning in Spring semester 2020 and ending in Spring semester 2021: pre on-line rates averaged over the previous three years were 75%; whereas, success rates in emergency on-line classes averaged 53%. Currently, all classes are face-to-face and success rates comparable to pre on-line levels are anticipated for the 2021-2022 year.

2. Enrollment:

Enrollment at the three campuses, augmented by on-line course enrollment, dropped from 335 students in 2019-20 to 306 in 2020-21; this is believed to be primarily a consequence of reduced class capacities imposed in response to the COVID epidemic. Pre-COVID capacities will be re-established in the spring of 2022.

3. Tracking of student achievement of SLOs is necessary to identify low-achieving objectives that require mitigation; these will be addressed with actions taken in individual courses.

4. Outreach to declared geology majors is desirable to help encourage their progress.

**Describe any external opportunities or challenges.:** The COVID epidemic forced on-line delivery of courses in 2020-2021; we are currently face-to-face.

**Overall SLO Achievement:** TWO courses (GEOL 1 and GEOL 12) underwent SLO assessment this year; a third course was due for assessment but was not offered.

1. Both courses show similar variations in SLO achievement.

2. Achievement varies widely within individual courses; for example in GEOL 1 achievement ranges from 84% to 44% for the same SLO;

3. In general, achievement is somewhat higher in the field trip courses than in the classroom courses.

A number of variables may influence student SLO achievement including the quality and effectiveness of instruction, the level of difficulty of the objective, and the difficulty of the measurement device (this is particularly true for courses taught exclusively by one instructor, for example ESCI 1 compared to the geology courses). From an instructional standpoint, it seems that the utility of SLOs lies in the formulation and measurement of specific objectives for each course. This is an on-going effort of instructors in the Geology/Earth Science program.

**Changes Based on SLO Achievement:** No changes are planned

**Overall PLO Achievement:** Changes that have been instituted at the SLO level, which by their linked nature, affect PLO achievement. The Geology Program is due for assessment during the 2020-2012 academic year.

**Changes Based on PLO Achievement:** No changes are planned

**Outcome cycle evaluation:** All courses in the Geology Program have been assessed with the exception of GEOL 150 which has not been offered. The Geology/Earth Science Program is nearly up-to-date with the assessment cycle as described on the COS website (assessments of two courses (ESCI and GEOL 153) and the program are overdue). Courses scheduled to be evaluated this year are: GEOL 5 and GEOL 151.

**No Action were returned for this Unit based upon the selected parameters.**