De Anza College

Program Review – Annual Update Form – Fall 2025

1. Department/Area Name **Geology**

2. Name of individual(s) completing the form: **Marek Cichanski**

3. Briefly describe how your area has used the feedback from the Comprehensive Program Review and Annual Program Review Update provided by RAPP members over the past two years (if unsure, request the feedback form from your dean/manager).

   - The feedback from last year's Geology APRU mostly concerned the timeline for teaching a new Geology class (GEOL 11, Evolution of the Earth). RAPP's feedback said that the Geology department should give a timeline for when this course will be taught.
   - *Brief background:* GEOL 11 is the key to being able to offer an Associate Degree for Transfer (AD-T) in Geology. New funding models have incentivized the creation of more AD-T degrees, so the College directed the Department to write curriculum for a GEOL 11 course during 2024-25; this curriculum-writing was the major focus of the previous APRU.
   - During 2025-26, the Department and the Division Dean developed a plan to offer GEOL 11 starting in Fall 2026. This was part of the planning for full-year scheduling, which was directed by the office of the VPI.
   - Unfortunately, reviewers outside the College had objections to the GEOL 11 curriculum. Revisions are being made by the Department, and the current plan is to offer it starting in Fall 2027.

4. Describe any changes or updates that have occurred since you last submitted program review (program review submissions).
   - The Geology Department is developing the Geology 11 course for an AS-T degree (see item 3, above).
   - Since the last APRU, the Geology Department and the Division Dean continued to explore scheduling options, in particular for teaching more on-campus class sections. However, the switch to Community-Based funding for the college has meant that the number of Geology sections, and the number of sections in various modalities, will remain the same in 2026-27 as it was in 2025-26.

5. Provide a summary of the progress you have made on the goals (i.e., OKRs for Student Services) identified in your last program review (as included in the comprehensive program review or annual program review update).

Goal title	Goal description	Responsible parties	Collaboration with….	What evidence have you used to monitor progress?	How have you assessed your goal?	What changes have been made based on the assessment?
Geology AS-T degree	Create course(s) for an AS-T degree in Geology	Marek Cichanski, Chris DiLeonardo	Division Dean, Curriculum Committee	Has the curriculum been approved, both inside and outside De Anza College?	Geology 11 curriculum was approved at De Anza, but not approved by outside reviewers.	Curriculum is being revised to take into account feedback from outside reviewers.

6. If your goals (i.e., OKRs for Student Services) are changing or you are adding a new goal(s), please include them below. If new goals require resources, please list requested resources that were not included in your last program review.

Goal title	Goal description	Responsible parties	Collaboration with….	What evidence will you use to monitor progress?	How will you assess achievement of the goal?

7. Describe the impact to date of previously requested resources (personnel and instructional equipment, facilities/upgrades) including both requests that were approved and were not approved. For example, what impact have these resources had on your program/department/office and measures of student success or client satisfaction and what have you been able to and unable to accomplish due to resource requests that were approved or not approved?

   New materials and equipment were not requested in the last APRU, and are not being requested yet (i.e. not in this APRU) because the timeline for teaching the new course

(Geology 11) has the first quarter of instruction (for Geology 11) as Fall 2027. It is possible that lab supplies such as fossil samples may be requested next year.

In the Department Coordinator's Fall 2025 Geology 10 class, one of the students is a retired Silicon Valley engineer with a lot of pre-existing knowledge of the geological sciences. They have offered to buy the Geology Department a seismometer, if the College can provide the necessary infrastructure to install and maintain it. The Department Coordinator and Division Dean are investigating the logistics of how this project might proceed.

The infrastructure that would result is more modest than might be expected. The device in question is a small box built around a Raspberry Pi circuit board, and can probably be installed near or on the floor, behind a cabinet in the Geology lab room or the Geology storeroom. It would allow students to monitor and study earthquakes and integrate De Anza's data with larger seismic networks. These devices are made and sold by the Raspberry Shake organization, which also provides software, educational resources, and collaboration opportunities for educators. Further information can be found at raspberryshake.org.

8. How have these resources (or lack of resources) specifically affected disproportionately impacted students/clients? If you have not requested or received resources, still describe how your area has been able to serve disproportionately impacted students/clients.

   The Geology Department has continued to serve all student groups, including disproportionately impacted students, by providing a pathway for students to complete their physical science and lab science requirements. A variety of student-centered instructional techniques are used, from the in-class voting questions used by one of the two instructors, to the collaborative exams used by the other instructor. Additionally, all of the department's classes include a field trip, to expose students to geology and oceanography in the real world. When the Geology 11 curriculum is approved by extramural reviewers, students will have the opportunity to earn an AS-T degree in Geology.

9. Refer back to your Comprehensive Program Review and Annual Program Review Update from the past two years under the section titled Assessment Cycle or the SLO website (https://www.deanza.edu/slo/. In the table below, provide a brief summary of one learning outcome, the method of assessment used to assess the outcome, a summary of the assessment results, a reflection on the assessment results, and strategies your area has or plans to implement to improve student success and equity. If your area has not undergone an assessment cycle, please do so before completing the table below.

Table 1. Reflection on Learning Outcomes (SLO, AUO, SSLO)

Learning Outcome (SLO, AUO, SSLO)	SLO from Geology 10: Use observations from the crust and lithosphere of the Earth to determine geologic history at hand-sample, outcrop, local, and regional scales.
Method of Assessment of Learning Outcome (please elaborate)	The Department Coordinator always uses a type of question on their Test 2 (of 3) which was originally created many years ago by Sandy Hay, who was the founding Geology instructor at both Foothill and De Anza Colleges, and the founding PSME Division Dean at De Anza. In this question, students are given cross-sections of an idealized set of tilted sedimentary strata, and asked to determine which cross-section shows a transition from marine to non-marine conditions (or vice-versa). To assess this SLO for the current APRU, the Dept. Coordinator calculated the percentage of students answering this question correctly on their Test 2, as well as on an anonymous in-class "voting" version of the question designed as practice for Test 2. For the previous APRU, this was done for the Coordinator's classes in F22, Sp23, F23, Sp24, and F24. For this APRU, the percentage was calculated for the Coordinator's classes in W25, Sp25, and F25.
Summary of Assessment Results	The results from W25 through F25 were different from those reported in the last APRU. Then, the in-class voting results were consistently higher than for the version of the question on Test 2. W25 continued that pattern, with the in-class version having 83% correct and the on-test version having 54% correct. By contrast, in Sp25 and F25 the in-class version had percentage-correct values of 68% and 65%. These were lower than the on-test version, which had percentage-correct values of 74% and 67%. (Note: These percentages do not reflect the grades given for the on-test version of this question, because the instructor uses a partial-credit system on their multiple-choice tests. This system results in overall test scores that usually average around 80-85%, similar to the results which "curving" would yield, but without putting students in competition against each other the way "curving" does.)
Reflection on Results	In the previous APRU, it was pointed out that a simple interpretation of the higher scores from the in-class version of the question could be the following: Students can discuss the question prior to casting their individual anonymous votes, and thus they can help each other figure it out. Since the pattern of in-class versus on-test success reversed in Sp25 and F25, additional hypotheses must be sought. Here is a possibility that could be investigated (although **how** it might be measured and quantified is a

	thorny problem): Has the tendency for students to actually discuss the in-class voting question decreased? To the instructor who gave these questions, it seems this is the case. When the in-class voting questions were first introduced several years ago, they seemed to frequently inspire a lot of discussion among the students prior to the votes. Now students seem to hardly discuss the questions at all, despite being encouraged to do so. This may reflect new trends in the ways students approach the in-class experience, similar to the way in which nearly all of them spend most of their time in class looking at mobile phones and laptops, rather than looking at the instructor, the whiteboard, or the images displayed on the projector screen.
Strategies Implemented or Plan to be Implemented (aka: enhancements)	This could potentially be an area where some sort of collaborative exams might be tried, as described in the Comprehensive Program Review. However, it is important to point out that the collaborative exams are only used by **one** of the two Geology instructors, and **NOT** by the instructor whose question results are described and discussed above. Switching to an entirely new exam format, based on a completely different testing philosophy, would be a major change, and must be explored and considered carefully before being tried. Significant numbers of currently-unanticipated negative consequences could result from such a major change. Thus, any such experiment would probably happen some time in the future, especially with the Department's AS-T development and 5-year revisions being in-work at the present time.

Please email this form to your dean/manager.

10. Dean Manager Comments:

11. Vice President/Associate Vice President Comments:

The Geology Department continues to provide strong instruction in physical and laboratory science while advancing the development of a Geology AS-T degree that will expand transfer pathways for students. The creation of Geology 11 represents a critical step toward this goal, and the department's responsiveness to external reviewer feedback reflects a strong commitment to curriculum quality and academic rigor. Faculty continue to use student-centered instructional strategies, including collaborative learning and field-based experiences, that enhance engagement and deepen understanding of earth systems. Once Geology 11 is approved and launched, students will gain access to a clear and valuable transfer pathway in geology.