

De Anza College

Program Review – Annual Update Form – Fall 2025

1. Department/Area Name:

Astronomy

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

Caitlin Kepple

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).

We understand from the committee's feedback that more clarification about the SLO changes would be helpful. We have also taken the committee's advice to look over the Success, Retention and Equity Gap data and use this data to inform this report.

4. Describe any changes or updates that have occurred since you last submitted program review (program review [submissions](#)).

Last year we had only just begun the process of forming new SLO language and how to assess each outcome. We have since completed drafting the new SLOs to be adopted on the 5-year revisions for both of our ASTR lecture courses (to be submitted in January 2026). A portion of our plans for data collection and an example SLO has been entered in the table at the end of this document.

The most significant change has been successful implementation of the new Planetarium equipment and software, as of Fall 2025. While we are still developing the exact Planetarium demos we would like to use in the long term, the new software has already proven to be a major asset for students.

We have also made significant progress on developing two OER textbooks that are specific to our ASTR 4 and 10 lecture courses, which will be complete by Spring 2026.

We also continue to revisit discussions of new course offerings and how we may better serve students in this capacity. In particular, we are planning to further explore options for non-credit courses over this next year.

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?
Revise SLOs and SLO assessment methods	Evaluate the SLOs in all ASTR courses for relevance and effectiveness towards supporting student achievement. Following this, craft an SLO assessment process for each course that maximizes the gathering of useful data while minimizing the	ASTR full-time faculty	ASTR part-time faculty	Meaningful advancement of SLO language since last year, communication with all faculty in the department to plan possible common assessment methods	<p>We have achieved our goal of evaluating and revising the SLOs, ensuring they will be a part of the upcoming 5-year revisions.</p> <p>This fall, we have begun discussing possible methods of assessment, particularly whether we can come up with a way for everyone to have similar methods across all instructors/sections.</p> <p>We observe that the overall success rate for Black, Latinx, and Filipinx students (as a</p>	<p>We continue to advance this goal as planned, and are still working to come up with a method for collecting assessment results that can work across the entire department.</p> <p>The increased rate of student successes over the past year is an encouraging indicator, which we hope to use the new SLOs to further explore.</p>

	struggle associated with gathering it				group) has notably increased over the past year. This positive trend is also present for other student groups, though not as pronounced. In any case, having SLO data to understand areas of success or non-success at a more granular level will be our next step.	
Review ASTR course offerings	Compare the department's slate of General Education courses with G.E. offerings at other 2-year and 4-year colleges, and decide whether or not to offer any new and/or different G.E. courses	ASTR full-time faculty	ASTR part-time faculty	<p>As a department, we have consistently revisited this topic, taking inventory of any changes in enrollment and student feedback on the courses themselves.</p> <p>Evidence for progress can be seen in changes to our course schedule (and resulting enrollment trends), along with plans to submit new course proposals to the curriculum committee.</p>	<p>We have observed that synchronous online sections tend to fill more slowly (and less reliably) each time they are offered. Students and instructors have also given feedback that the modality is not ideal for engagement or attendance. There seems to be a wide variability in student equity gaps for these sections. This could possibly mean that students have very different experiences of the course, depending on instructor. This data verifies the challenge of teaching synchronous online courses, which we are taking action to resolve.</p> <p>In terms of the Astronomy Lab sections, we have observed positive trends for enrollment and student success over the past several quarters. This</p>	<p>In response to the challenges with synchronous online courses, we have submitted documentation to replace this modality with a hybrid section of the same course. We are planning to replace the synchronous online course with a hybrid modality by Fall 2026.</p> <p>Given the positive results of the Astronomy Lab, we continue to offer additional sections throughout the academic year.</p>

					data is affirmed by positive feedback from students, as this course has remained a popular option.	
Research and develop effective uses of technology in Astronomy education	<p>Continue to learn and innovate in two areas:</p> <p>1) Best practices for using the De Anza Planetarium to help students understand the visual and spatial concepts so common in Astronomy, and</p> <p>2) Best practices for using technology other than the Planetarium, such as the computer simulation tools we use in the Astronomy lab course and in our online courses.</p>	ASTR full-time faculty	De Anza Planetarium staff, ASTR part-time faculty, the larger community of Astronomy education researchers	<p>Progression of the planetarium upgrade, and receiving training on the new equipment</p> <p>Development of OER textbooks, particularly those that are accessible and equity-oriented</p>	<p>Successful implementation of using the new planetarium software for instruction during Fall 2025 quarter</p> <p>Taking into account the requirements for online resources to be accessible, and maintaining the planned schedule for writing the OER texts.</p>	<p>We have developed many new or revised planetarium demos and activities for instruction. This is an ongoing process, as the new software requires a significant amount of coding in order to develop more advanced demonstrations.</p> <p>We have continued to advance our knowledge of astronomy-specific resources that are accessible. This has helped shape our plans for what to include in each section of the textbook, based on accessibility considerations.</p>

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.

We have not made any major changes to our goals, but are considering one suggestion from the RAPP feedback as a possible future addition to our goals. This suggestion was to possibly create a tool for data collection that can more easily measure the impact of resources for disproportionately impacted student groups. In particular, a tool for measuring the impact of the planetarium technology specifically could be helpful.

- 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?**

As of Fall 2025, our department has begun using the new Planetarium system with numerous hours of training that began in Spring/Summer 2025. This new resource has already made a meaningful impact among students and faculty, enabling additional use of the planetarium during class, as it has many more features and advanced capabilities than the old system. We will continue to make further changes to the curriculum to eventually utilize the planetarium to its full potential, as many changes require longer-term efforts to code/revise/test out new demos.

- 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.**

While we have only just begun using the new Planetarium equipment, it is clear this upgrade is a major asset for the department overall. The new software is significantly more advanced than the previous software, and also has more accessibility features that can make a difference for any audience. For example, we are now able to display captions on full-dome videos, which was not an option before. In addition, instructors have more visualization options for demonstrating colors/sizes of astronomical objects that do not depend on certain color schemes (which may be inaccessible for some students), as they did before. During this first quarter of using the new software, there has been a notably positive response from students in terms of the engaging and visually immersive aspects of the planetarium.

- 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)	Apply fundamental theoretical principles and evidence-based reasoning to explain how observations and data inform our current understanding of the universe and everyday phenomena.
Method of Assessment of Learning Outcome (please elaborate)	Formative or summative assessment (e.g., an exam or quiz) question. In particular, data will be collected on topics that the class has discussed both from a theoretical and observational perspective. For example, the Solar System Astronomy course discusses Kepler’s Laws of Planetary Motion. Students will be able to apply the theoretical laws and apply to real orbit data of planetary bodies around the solar system.
Summary of Assessment Results	We have not yet gathered assessment results for this particular SLO.
Reflection on Results	N/A
Strategies Implemented or Plan to be Implemented (aka: enhancements)	During our Fall 2025 department meeting, we discussed the new SLOs to be implemented as part of the 5-year review and the possibility of coming up with common methods/questions for student assessment.

Please email this form to your dean/manager.

10. Dean Manager Comments: The department has been very active in events and updating curriculum/SLOs. They are working on writing NC courses along with a certificate.

11. Vice President/Associate Vice President Comments:

The Astronomy Department continues to demonstrate strong instructional innovation and a clear commitment to student success, equity, and accessibility. The successful implementation of the new Planetarium system has significantly enhanced the learning environment, providing immersive, accessible, and visually rich instructional experiences. The department's progress in revising SLOs, developing accessible OER textbooks, and modernizing assessment practices reflects a thoughtful and data-informed approach to continuous improvement. The planned transition from synchronous online to hybrid modalities responds directly to student feedback and enrollment trends. Collectively, these efforts position Astronomy as a model of technology-enhanced, equity-centered STEM education.