

De Anza College

Program Review – Annual Update Form

1. Briefly describe how your area has used the feedback from the Comprehensive Program Review provided by RAPP (Resource Allocation and Program Planning) members

Feedback from the Comprehensive Program Review was instrumental in identifying areas of improvement and prioritizing strategies to enhance student outcomes. Based on the feedback, the department focused on the integration of equity-driven practices and alignment of resources with departmental goals like the MESA program, Math club for students, and Guided Pathways workshops focusing on mental health, transfer, interview- preparation, and more. We continue utilizing assessment tools such as surveys, course performance metrics, and feedback evaluations that are currently used and will be used to monitor progress. Equity-driven strategies included culturally responsive teaching and faculty development initiatives. Efforts to increase enrollment included developing new certificates and collaborating with Engineering and CIS departments to align resources with emerging demands.

2. Describe any changes or updates that have occurred since you last submitted program review (comprehensive program review submissions)

The De Anza College Math Department has demonstrated a strong commitment to academic excellence and student success. In recent years, we have:

- Hired a new full-time faculty member, expanding our capacity to serve students.
- Collaborated with the Engineering Department to develop a new certificate program, demonstrating interdisciplinary collaboration and meeting emerging student needs.
- Developed four new mathematics certificates, providing students with valuable specialized skills and enhancing their career prospects.

- Updated over 20 math curricula to incorporate the latest pedagogical approaches, ensuring our programs remain current and relevant.

Despite these achievements, the department continues to face a critical faculty shortage. As our student enrollment grows back up, the increasing demand for mathematics courses have outpaced our ability to maintain with current staffing.

3. Provide a summary of the progress you have made on the goals identified in your last program review (as included in the comprehensive program review).

Progress on goals identified in the last program review includes:

- Successfully expanding the curriculum to include certificates that better prepare students for academic and career pathways.
- Strengthening interdisciplinary collaboration through the new certificate with the Engineering Department.
- Hiring additional faculty to address workload and maintain the quality of instruction.
- Making substantial updates to course content to align with current educational and industry standards.

4. If your goals are changing, use this space to provide rationale, or background information, for any new goals and resource requests that you'll be submitting that were not included in your last program review.

New goals include:

Expanding the integration of programming and data analysis into the math curriculum to align with modern industry demands.

Increasing outreach efforts to promote equity and access in mathematics, particularly for disproportionately impacted groups.

Seeking additional funding for instructional tools that support online and hybrid learning formats.

De Anza College Mathematics Department faces a critical resource imbalance.

While student demand for mathematics courses continues to surge, the number of full-time faculty has remained stagnant for over two decades. This disparity significantly impacts our ability to:

Provide high-quality instruction: The current faculty-to-student ratio strains our ability to deliver effective instruction and support student learning effectively.

Meet student needs: Growing enrollment necessitates expanding course offerings, which becomes increasingly challenging with limited full-time faculty.

Advance curricular development: A robust full-time faculty is crucial for developing innovative curricula, incorporating cutting-edge pedagogical approaches, and ensuring our programs remain relevant and responsive to the evolving needs of our diverse student body.

Foster a strong academic community: Full-time faculty play a vital role in mentoring students, advising on academic pathways, and contributing to the intellectual life of the department.

To address this pressing issue and ensure the continued success of our mathematics students, we urgently request the approval of two new full-time faculty positions. This strategic investment will empower the department to effectively serve our growing student population, maintain high academic standards, and strengthen our position as a leader in mathematics education.

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

Approved Requests:

Hiring a full-time faculty member has improved course coverage and provided additional mentorship opportunities for students.

Unapproved Requests:

Unfulfilled requests for additional faculty positions have strained existing resources and impacted student-to-teacher ratios.

The De Anza College Math Department faces a critical faculty shortage. Growing student demand cannot be met with the current number of full-time faculty, impacting instruction quality, curriculum development, and student support. To address this, we urgently request the approval of two new full-time faculty positions.

Updated instructional equipment can enhance the delivery of online and in-person courses, supporting student engagement.

6. How have these resources (or lack of resources) specifically affected disproportionately impacted students/clients?

Approved resources have enabled more accessible and engaging learning environments, positively affecting disproportionately impacted students.

The lack of advanced software and additional staffing has created challenges in offering equitable access to high-quality learning experiences. This is particularly evident in classes requiring individualized support or technology integration.

7. Refer back to your Comprehensive Program Review under the section titled Assessment Cycle as well as the SLO website (<https://www.deanza.edu/slo/>) for instructional programs. 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)	Math 1B-3Y (Calculus II) Course Objectives <ul style="list-style-type: none">• Analyze and explore aspects of the integral calculus.• Analyze and evaluate the definite integral as a limit of a Riemann sum and examine its properties• Examine the Fundamental Theorem of Calculus• Find definite, indefinite, and improper integrals using various techniques• Apply the definite integral to applications• Examine differential equations
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Method of Assessment of Learning Outcome (please elaborate)	Final exam questions including computing integrals and solving a differential equation. Students are expected to demonstrate proficiency in integral calculus, including applications and differential equations.
Summary of Assessment Results	Final exam results revealed that many students struggled with differential equations, a deficiency stemming from insufficient foundational knowledge in precalculus and algebra.
Reflection on Results	This lack of proficiency in precalculus and algebra negatively impacted their overall performance in the course, including their understanding of integral calculus topics.
Strategies Implemented or Plan to be Implemented (aka: enhancements)	To address these challenges and promote student success and equity, the department will implement the following support strategies: Offer noncredit precalculus/algebra review courses and a corequisite (support) class for Math 1B. Utilize embedded tutoring, encourage students to benefit from tutoring centers and form study groups. Utilize early intervention strategies (e.g., De Anza Connect) to identify and assist students struggling with precalculus/algebra concepts. Provide workshops and canvas modules focused specifically on integral techniques and differential equations before the final exam.

1. Dean Manager Comments:

The Department of Mathematics has been proactive in developing new curriculum, certificates, and courses while ensuring compliance with AB1705 and Common Course Numbering requirements. However, their most pressing need is additional full-time faculty. Over the past five years, the department has seen a significant reduction, dropping from 33 full-time faculty members to just 19. Despite a decrease in enrollment, this represents a net loss of 14 faculty members due to retirements or resignations. Given that each faculty member typically covers nine sections per year, this equates to a loss of 126 sections annually—a figure that far exceeds the impact of

enrollment declines. Even with recent hiring efforts, the department will still require two additional full-time faculty members to maintain adequate course offerings and ensure students receive the equitable support they need to succeed.