Instructional Annual Program Review and Planning Update Form Fall 2024

## BACKGROUND:

**Program review is an integral part of the campus planning process. As programs and areas monitor their progress on the current comprehensive four-year program review, changes in need and scope can be expected. This Annual PR Update form is designed to outline and request modifications to the current program review that occur between comprehensive four-year review cycles, as needed.**

**Examples of a requested change include new information such as action plans, outcomes modifications, personnel changes, technology needs, and capital expenditures requirements. As programs and areas monitor their progress on the previous comprehensive four-year program review, the form provides the basis to suggest a change in plans and processes to improve student success and institutional effectiveness.**

## SUBMISSION:

**Program:**

Mathematics

**Principal Author(s):**

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**Dean:**

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**Submission Date:**

11/14/2024 12:21:27 PM

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# Part 1: Review of Data

## Use the data provided by the Office of Institutional Effectiveness (OIE)--[available in August 2024](https://fullcolledu-my.sharepoint.com/:f:/g/personal/dberumen_fullcoll_edu/Ejn54PAVVhJLqimOjiLWBBYBPkPdoZEFZxZtScvvyibo6A)--to review your program completion and success rates and compare them to the Institution Set Standards for course completion and success rates. Then, answer these questions:

1. **Where your program meets or exceeds the college-wide standard for completion and success, to what do you attribute your success?**

Based on the Institutional Set Standards, the Mathematics Department meets the completion and success rate standards set by the college for some groups of students. The department meets the completion standard for Asian students (79.0%), Native American students (75.0%), and White students (76.4%). The department meets the success rate standard for Asian students (65%).

Over the course of last year, the Math Department has continued working on student completion and success. Beyond offering more support courses, we have been more steadfast in our communication about these courses with the Counseling Department. Moreover, we have started offering topic-specific workshops during the semester to help students in a variety of courses as well as final review workshops for various courses near the end of the semester. Thanks to the program review funds, we have been able to transform two of our classrooms into collaborative classrooms. The Math and Computer Science Tutoring Lounge, formerly known as the Math Lab, began to implement more student-friendly practices such as using the flag system at every table and computer booth to alert tutors’ attention for help, removing the waiting queue as students can receive tutoring assistance at their studying spots, supplying students with refreshments, assisting students with more non-textbook materials, offering collaborative studying space, etc. We have also continued to increase the resources available in our course-specific Canvas shells for our instructors to use. The increased collaboration amongst instructors has improved and will continue to improve the quality of instructional resources available to instructors and students.

1. **Where your program does not meet this standard, please examine the possible reasons and note any actions that should be taken, if appropriate.**

Based on the Institutional Set Standards, the Mathematics Department does not meet the completion and success rate standards set by the college for some groups of students. The department does not meet the completion standard for Black/African American students (66.7%), Filipino students (58.3%), Latinx students (67.8%), Pacific Islander students (66.7%), Two or more races/ethnicities (70.9%), and Unknown/Decline to State students (72%). The department does not meet the success rate standard for Black/African American students (35%), Filipino students (42%), Latinx students (43%), Native American students (25%), Pacific Islander students (30%), Two or more races/ethnicities (53%), Unknown/Decline to State students (54%), and White students (57%).

The Math Department continues to deal with the ramifications of AB 705 and AB 1705. The challenge of providing corequisite support while simultaneously covering the course material is immense. Additionally, efforts to increase our embedded support by increasing the units for our STEM courses (primarily Math 151: Calculus I), have encountered legal roadblocks, such as the 60-unit maximum for all transfer degrees.

To address this challenge the Math Department continues to partner with Hornets Tutoring to have embedded tutors in courses. This would be a good initiative in which to increase participation. Additionally, the Math and Computer Science Tutoring Lounge, formerly known as the Math Lab,has been revitalized and energized with student-centered practices. We can continue to encourage increased utilization of the MaCS Tutoring Lounge and have adjusted operating hours based on student demand. Increased student participation in the Math Success Program and the Tutoring Center should also benefit retention and success. We plan to continue our cohort-based programs (STEM, MESA, AJPP, TPP, and dual enrollment) which help with a sense of belonging and retention. We are especially excited to collaborate with the MESA program to expand our cohort-style classes for STEM students.

1. **Compare your data analysis in questions 1 and 2 to the review of data in your 2023 Annual Program Review update (available on the** [**Program Review and Planning Committee**](https://committees.fullcoll.edu/program-review/) **website). Are there significant changes? Do you notice any patterns from year to year?**

The data from 2022-2023 and 2023-2024 show similar patterns. The patterns of success and retention are relatively stable. As we prepare for full implementation of AB 1705, we are looking for ways to continue the upward trend of success and retention. Both our overall success completion and success rates have increased. The department has a course completion percent increase of 1.4% and a course success percent increase of 2.3%. While these numbers are not ideal, they are gains. In fact, our overall course completion rate (70.7%) is not too far off from the college completion standard (74.0%).

# Part 2: Additional Resource Request Reasoning and Support

**We have reviewed our most recent self-study and have not identified any significant changes that necessitate resource requests for the upcoming academic year.**

**We have reviewed our most recent self-study and have identified significant changes that necessitate additional resource requests.**

**For programs that have identified significant changes that necessitate additional resource requests, answer the following questions for each separate resource request:**

1. **Briefly describe your resource request.**

We would like to increase the number of whiteboards in all of our classrooms. While our classrooms have a whiteboard at the front of the room, we want to encourage student collaboration and active learning during class time. We feel that the added whiteboards will help this. The new whiteboard space would make learning more visible and provide the instructors with a quick method to assess learning. In addition, we would like to replace the furniture in our remaining (9) math classrooms and the math annex area, including desks and chairs, to create collaborative spaces that are conducive for improved student engagement and more significant student-student and student-instructor relationships.

1. **Is this request related to an essential safety need?**

No

**Why must this resource request be processed now rather than during the Fall 2025 comprehensive self-study?**

AB 1705 takes full effect in Fall 2025 which means that we have had to make massive changes to our mathematics program. Part of the legislation has provided us with the opportunity to create an innovative course to help our Calculus I – bound students succeed. The course we created is Math 140: Precalculus. This is a 6-unit course that must be validated to actually improve the likelihood of success for students in Calculus I and II by Spring 2027. Having classrooms that encourage students to actively engage with the material will help all students, but importantly, those students in both Precalculus and Calculus I. Many students will opt to take Calculus I directly, and they need as many opportunities to engage with the material in class as possible. If we wait until Fall 2025 for our full program review, our students will not have access to this added resource and we feel that the Precalculus class will be more likely to not be successfully validated. We have seen in our Math Lounge that students enjoy working together and want to mirror that experience in the classroom. We would like the math annex area to be updated as well because it is an additional collaborative workspace area that many students do use. The tables in the area are outdated and do not allow for as many students to utilize the area effectively.

**How will this additional resource allocation specifically enhance your program’s services, activities, processes, etc. to continue or improve student learning and achievement?**

Several studies on collaborative spaces and team-based learning show that there is an improvement on retention and learning gains for students of all levels, genders, and races. Such learning environment can be designed to facilitate interactions between small groups working on interesting tasks, simulations, or group presentations. However, to have a significant impact in math courses several classrooms at Fullerton College will have to be repurposed and current furniture will have to be replaced with more modern desks that are conducive for teamwork. Restructuring the physical space has the added benefit that it will encourage the instructors to rethink their teaching and the way they engage with students. This would also provide an opportunity for instructors to consider their role in the classroom as facilitators of learning.

**Is the resource request personnel-related? If so, please provide evidence to justify the requested positions such as retirements, program growth or curricular demands, full-time/adjunct ratios, etc.**

No.

**How will this additional resource allocation help you serve the college mission or strategic initiatives, and your program’s goals for improvement, as stated in your last self-study?**

The new whiteboards and furniture would create a better environment for alternative teaching methodologies such as flipped courses, as stated in our previous math department goals. This request promotes the college’s goals and objectives by promoting success for every student (Goal #1) and cultivating a culture of equity (Goal #2). The new furniture would improve student critical thinking skills and increase the completion of courses by allowing students to collaborate more efficiently. The whiteboards will allow students to engage with the math and other students more effectively while also providing the instructor with a much more efficient way of analyzing work during class. We also aim to remove institutional barriers to student equity and success by creating a sense of belonging through communities of learners. Several studies on collaborative spaces and team-based learning show that there is an improvement on retention and learning gains for students of all levels, genders, and races. Such learning environments can be designed to facilitate interactions between small groups working on interesting tasks, simulations, or group presentations. However, to have a significant impact in math courses several classrooms and math spaces at Fullerton College will have to be repurposed and current furniture will have to be replaced with more modern layouts that are conducive for teamwork. Physical restructuring would not be an option as the current furniture does not easily allow for collaborative or active learning.

**For each separate resource request, complete this chart with details of the request:**

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| --- | --- |
| **Type of Resource** |  |
| Personnel |  |
| Facilities |  |
| Supplies |  |
| Computer Hardware |  |
| Computer Software |  |
| Training |  |
| Other | Equipment:  We received a quote for the purchase and installation of additional whiteboards for rooms 615, 617, 611-C, 621, 622-A, 622-B, 623, 624, 1958, 1959, 1960. The total cost will be about $85,000.  We received a quote for the purchase of desks and chairs for 611-C, 615, 617, 611-C, 621, 622-A, 622-B, 623, 624, 1958, 1959. The total cost will be about $385,000. We already have $81,000 from the 2023 annual program review update, so we will need $304,000  We receive a quote for the purchase of updated tables in the math annex 611 area for about $6,300. |
| **Total Requested Amount:** | $395,300 |

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| **Is the funding requested ongoing or one-time funding?**    One-time funds |
| **Is the funding requested for**[**enrollment and reengagement activities?**](https://ie.fullcoll.edu/wp-content/uploads/sites/27/2024/05/ER-2.0-Program-Review-Guide.pdf)  No |